

Service
Service
Service



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Service Manual

FT26Q
FA26Q

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Documentation Technique Service Dokumentation Documentazione di Servizio Huolto-Ohje Manual de Servicio Manual de Servicio



"Pour votre sécurité, ces documents
doivent être utilisés par des spécia-
listes agréés, seuls habilités à réparer
votre appareil en panne".



Subject to modification

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SPECIFICATION

General	Nominal value	Typical value
Mains voltage	: 220 V - 240 V~	: 220 V - 240 V~
Mains outlet	: For power supply of CD or record player	: For power supply of CD or record player
Low voltage outlet (12 V DC)	: For power supply of cassette deck	: For power supply of cassette deck
Mains frequency	: 50 - 60 Hz	: 50 - 60 Hz
Power consumption	: W max	: W max
Dimensions (WxHxD)	: 360 x 180 x 300 mm	: 360 x 180 x 300 mm
Weight	: kg	: kg
Remote control	: RC290	: RC290
Tuner: FM section		
Tuning range	: 87.5 MHz to 108 MHz	: 87.5 MHz to 108 MHz
Aerial inputs	: 75 Ω coaxial	: 75 Ω coaxial
Sensitivity	: μ V 26dB S/N at 98 MHz	: 1.3 μ V 26dB S/N at 98 MHz
at 75 Ω Δ f 75 kHz	: μ V 46dB S/N at 98 MHz	: 25 μ V 46dB S/N at 98 MHz
Selectivity	: dB at 300 kHz off resonance	: 60dB at 300 kHz off resonance
Suppression	: dB - dB	: 80dB - 50dB
IF-AM	: dB	: 50dB
pilot tone	: dB	: 75dB
image frequency	: ..dB (at 106 MHz)	: 40dB
Channel separation	: 40dB	: 40dB
Distortion T.H.D	: 0.25 %	: 0.3 %
mono	: 0.7 %	: 0.5 %
stereo	: dB	: 74dB
Signal/noise	: dB IEC weighted	: 68dB
ratio		
stereo		
tuner: AM section		
Wave ranges	MW	: 522 kHz to 1611 kHz (585-187 m)
	LW	: 153 kHz to 281 kHz (1960-1067 m)
Sensitivity		: μ V 26 dB S/N (600 kHz)
Selectivity		: 200 μ V 26 dB S/N (600 kHz)
Suppression	IF	: 27dB at 9 kHz off resonance
Output		: 55dB
		: mV
Tuner: Digital section		
Tuning steps	FM/MW/LW	: 50 kHz / 9 kHz / 1 kHz
Presets	FM/MW/LW	: 29 / 29 / 29 random sequential
Amplifier		
Output power		: 43 W in 8 Ω (1 kHz, D = 10%)
		: 40 W in 4 Ω (1 kHz, D \leq 1%)
		: 35 W in 8 Ω (1 kHz, D \leq 1%)
		: 30 W acc. to IEC
Distortion		
T.H.D.	: \leq 0.1% at 1 kHz	: \leq 0.09% at 30W for 1 kHz, 8 Ω
Intermodulation		: 0.1% at 25 W
Frequency response		
Linear inputs	: from Hz - kHz \pm dB	: from 20 Hz - 20 kHz \pm 1.5dB
Equalized inputs	: from Hz - kHz \pm dB	: from 20 Hz - 20 kHz \pm 1.5dB
Bass control	: at Hz + dB to - dB	: at 80 kHz + 10 dB to -10dB
Treble control	: at kHz + dB to - dB	: at 10 kHz + 10 dB to -10dB
Balance control		: 0-50dB
Signal/noise ratio		
weighted		: 95 dB
Channel separation	: at 1000 Hz \geq dB	: at 1000 Hz \geq 60dB
Input sensitivity	: mV at k Ω	: 150 mV at 25 k Ω
Phono MD	: 5 mV at 2.2 k Ω (FTC)	: 2.1 mV at 4 k Ω (FTC)
Tuner	: mV at k Ω (FTC)	: 150 mV at 25 k Ω (FTC)
Tape 1	: mV at k Ω (FTC)	: 150 mV at 25 k Ω (FTC)
Tape 2/VCR	: at 250 Hz-10 kHz \geq dB	: at 250 Hz-10 kHz \geq 35dB
CD/CDV	: 500 mV at 1 k Ω (FTC)	: 150 mV at 25 k Ω (FTC)
Aux 1/TV	: mV at k Ω (FTC)	: 150 mV at 25 k Ω (FTC)
outputs		
Tape 1	: mV	: 150 mV
Tape 2/VCR		: 150 mV
Loudspeakers 2x2	: 8 Ω	: 8 Ω
Headphones	: 8-1000 Ω	: 8-1000 Ω
Processor in/out		: 150 mV

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

F

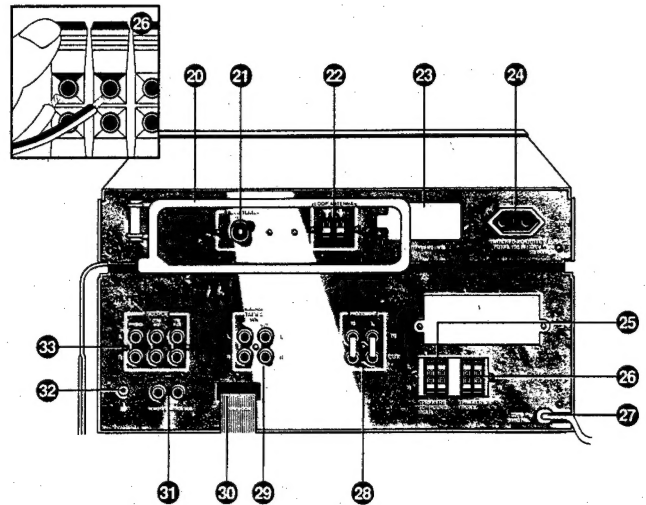
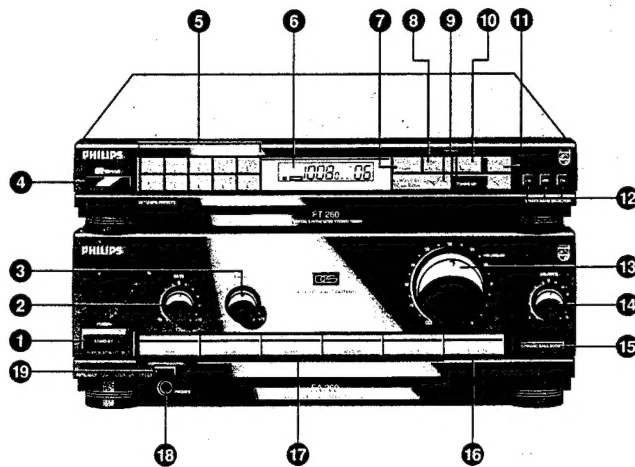
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambio identici a quelli specificati.



CONNECTIONS AND CONTROLS

- | | | | |
|----|---------------------------|----|----------------------------|
| 1 | Stand by button | 20 | Loop aerial |
| 2 | Bass control | 21 | FM antenna |
| 3 | Treble control | 22 | Loop antenna |
| 4 | Sensor | 23 | Battery |
| 5 | Presets 0-9 | 24 | Switched AC outlet |
| 6 | Display | 25 | Speakers surround |
| 7 | -/-- Button | 26 | Speakers |
| 8 | Auto/Man button | 27 | Mains lead |
| 9 | Tuning up/down buttons | 28 | Processor in/out |
| 10 | Memo button | 29 | Monitor-tape 2/VCR sockets |
| 11 | Mono button | 30 | Tape 1/cass |
| 12 | Waveband buttons | 31 | remote control |
| 13 | Volume control | 32 | Ground terminal |
| 14 | Balance control | 33 | Source input sockets for: |
| 15 | Dynamic bass boost button | | Phono |
| 16 | Monitor-tape 2/VCR | | CDV/CD |
| 17 | Source selectors | | TV/aux |
| | Phono | | |
| | Tuner | | |
| | CD-CDV | | |
| | Aux 1/TV | | |
| | Tape 1 | | |
| 18 | Phones socket | | |
| 19 | Surround sound button | | |

GB Servicing hints:

1. The bass, treble and balance buttons cannot be removed directly from the front plate.
The buttons are fixed on the back of the front (see exploded view).
Note: When mounting the operating board, one should take care that the buttons are in "0" position and the potentiometers in mid-position (see exploded view).
2. Volume button 408 has been provided with a led indicator.
Fig. 1 shows the path of the 2 wires to the led.
3. Fuses SI1 and SI2 are situated on the trafo board. They can be reached by removing lid 518 from rear panel 521.
4. Decasing instructions in connection with the accessibility of the printed-wiring boards for measurement (see also the exploded view).
 - a. The amplifier supply board can be reached by removing bottom plate 507 (8 screws). The 4 feet of the set need not be removed for this.
 - b. The plug source selector board can be reached by first carrying out step a. and then disconnecting the bottom rear panel 521 (4 screws).
 - c. The RF-IF board, the operating board, the volume control board and the trafo board (partly) can be reached by removing top plate 506 (2 screws on the back). Then lift the back of the top plate a little and pull it backward. When mounting the top plate, place it flat on the set and push it forward.
5. The printed-wiring boards have been provided with a connector at several places (such as 2A, 4A, etc.).
Fig. 2 indicates the mounting and demounting of the wiring.

F Conseils service

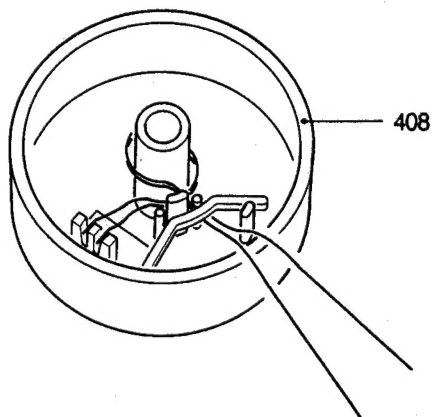
1. Les boutons "bass", "treble" et "balance" ne peuvent être enlevés directement par l'avant de l'appareil. Ils sont fixés à l'arrière du frontal (voir vue éclatée).
Remarque: au montage du operating panel, veillez à ce que les boutons se trouvent en position "0" et que les potentiomètres soient en position intermédiaire (voir vue éclatée).
2. Le bouton du volume 408 possède un indicateur lumineux.
En fig. 1 on voit le parcours des deux fils vers la LED.
3. Les fusibles SI1 et SI2 sont montés sur la carte du trafo et sont accessibles après avoir enlevé le couvercle 518 du panneau arrière 521.
4. Instructions de dépose (eu égard à l'accessibilité de des cartes en matière de mesure) (voir aussi à la vue éclatée).

NL Service wenken:

1. De knoppen bass, treble en balance zijn niet rechtstreeks vanaf het voorfront te verwijderen. De knoppen zitten aan de achterkant van het front bevestigd (zie exploded view).
Opmerking: Bij montage van de "operating panel" moet men er op letten, dat de knoppen in de "0" positie en de potentiometers in de middenstand staan (zie exploded view).
2. De volume knop 408 is uitgevoerd met een ledindicator.
Fig. 1 geeft de loop van de 2 draden naar de led aan.
3. De zekeringen SI1 en SI2 zitten op het "trafo panel". Deze zijn te bereiken door deksel 518 van het achterpaneel 521 te verwijderen.
4. Uitkastvoorschrift i.v.m. bereikbaarheid printen voor het meten (zie ook exploded view).
 - a. De "Amplifier-supply panel" is te bereiken door onderplaat 507 (8 schroeven) te verwijderen. Hierbij kunnen de 4 voetjes van het apparaat blijven zitten.
 - b. De "Plug source selector panel" is te bereiken door eerst punt a. uit te voeren en daarna het onderste achterpaneel 521 (4 schroeven) los te koppelen.
 - c. De "RF-IF panel", de "Operating panel", de "volume control panel" en de "Trafo panel" (gedeeltelijk) zijn te bereiken door de bovenplaat 506 (2 schroeven achterzijde) te verwijderen. Vervolgens de achterzijde van de bovenplaat iets optillen en naar achter trekken. Bij montage de bovenplaat vlak op de apparaat leggen en vervolgens naar voren schuiven.
5. De printen zijn op diverse plaatsen met een connector uitgevoerd (zoals 2A, 4A etc.).
Fig. 2 geeft de montage en de demontage van de bedrading aan.
 - a. la 'amplifier-supply panel' est accessible après avoir enlevé le panneau du fond 507 (8 vis). Les quatre pieds de l'appareil peuvent rester en place.
 - b. la 'plug source selector panel' est accessible après avoir excécuté le point a. et détacher par la suite le panneau arrière inférieur 521 (4 vis).
 - c. Les 'RF-IF panel', 'Operating panel', 'volume control panel' et 'trafo-panel' (partiellement), sont accessibles: après avoir enlevé le panneau supérieur 506 (2 vis à l'arrière). Soulever ensuite un peu l'arrière du panneau supérieur et le tirer par l'arrière. Au montage, poser la plaque supérieure bien à plat sur l'appareil et la faire glisser vers l'avant.

D Servicehinweise:

1. Die Knöpfe 'bass', 'treble' und 'balance' lassen sich nicht unmittelbar von der Vorderfront an beseitigen. Die Knöpfe sind auf der Rückseite der Frontplatte befestigt (siehe Explosionsansicht).
Anmerkung: Beim Einbau der 'operating panel' ist zu beachten, dass sich die Knöpfe in der Nullstellung und die Potentiometer in der Mittelstellung befinden (Siehe Explosionsansicht).
2. Der Lautstärkerreglerknopf 408 ist mit einem Leuchtdiodenanzeiger ausgestattet. Bild 1 zeigt den Gang der 2 Drähte zu der Leuchtdiode.
3. Die Sicherungen SI 1 und SI2 befinden sich auf der 'trafo panel'. Sie sind zugänglich durch Abnahme des Deckels 518 von der Rückplatte 521.
4. Ausbauvorschrift i.b.a. Zugänglichkeit den Leiterplatten zum Mesen (siehe auch Explosionsansicht).
 - a. Die 'amplifier-supply panel' ist zugänglich durch Beseitigung der Unterplatte 507 (8 Schrauben). Dabei können die 4 Füßchen des Geräts an ihrer Stelle verbleiben.
 - b. Die 'plug source selector panel' ist zugänglich, indem zuerst Punkt a. durchgeführt wird und anschließend die untere Rückplatte 521 (4 Schrauben losgekuppelt wird).
 - c. Die 'RF-IF panel', die 'operating panel', die 'volume control panel' und die 'trafo panel' (teilweise) sind zugänglich durch abnahme der Oberplatte 506 wenig anheben und rückwärts ziehen. Beim Einbau die Oberplatte flach auf das Gerät legen und dann vorwärts schieben.
5. Die Leiterplatten sind an mehreren Stellen mit einem Steckverbinder ausgeführt (wie etwa 2A, 4A usw.). Bild 2 zeigt den Einbau und den Ausbau der Verdrahtung.



MDA.02240
932/T07

Fig. 1

I Consigli utili

1. Le manopole bass, treble e balance non sono direttamente estraibili dalla parte anteriore del mobiletto, poiché queste manopole sono state fissate alla parte posteriore di questa facciata (si v. a proposito la sezione esplosa).
Attenzione: però che l'installazione dell'operating panel va accompagnata da altre due condizioni: l'azzeramento di tutte le manopole è indispensabile che i potenziometri si trovino a metà strada (si v. a proposito la sezione esplosa).
2. Il controllo volume 408 è stato munito di un indicatore LED. Fig. 1 indica il collegamento di due cavi con il LED.
3. Le valvole di sicurezza SI1 e SI2 sono situate nel trafo panel e si trovano rimuovendo il coperchio 518 dal pannello posteriore 521.
4. Si prega di prendere in atto le seguenti regole quando di passa allo smontaggio dei seguenti pezzi: (queste regole sono in relazione alla portata degli stampati che esegue operazione di misura (si v. appunto la sezione esplosa)).
 - a. Svitando otto viti dal basso 507 si trova il "Amplifier-supply panel", tenendo a mente che i quattro piedini dell'apparecchio possono rimanere al loro posto.
 - b. Il "plug source selector panel" si trova eseguendo prima a, e svitando successivamente 4 viti dal pannello posteriore 521.
 - c. Rimuovendo due viti posteriori dalla parte superiore 506 del mobiletto si trovano il "RF-IF panel", l' "operating panel", il "volume control panel", nonché il "Trafo panel" (parzialmente). Sollevare un po' la parte posteriore del mobiletto di sopra e tirarlo indietro. Durante l'installazione è indicato mettere la parte superiore diritta sull'apparecchio e, conseguentemente tirarla avanti.
5. Gli stampati sono state munite in diversi posti di un connettore, p.es. 2A, 4A etc.
Fig. 2 indica come attaccare e staccare i cavi.

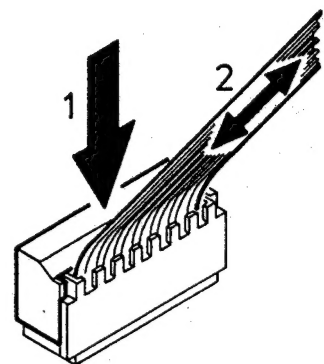


Fig. 2

GB SERVICE TEST PROGRAMME

The microprocessor contains a test programme which carries out the following chapters fully automatically when switched on.

1. Software version of the display
2. RAM test
3. Display test

Switching on the test programme

The test mode can be selected by depressing the FM and Phono buttons simultaneously.

The set should be in the stand-by mode for this.

The test programme will not be started if the microprocessor is defective or if a few basic conditions are not fulfilled.

In case of a supposed defect in the control section, it is therefore recommended that you first check the supply voltage, the function keys, the clock signal and the reset pulse.

Switching off the test programme

- a. The test programme cannot be left during the testing of chapters 1 and 2.
- b. The test programme can be left during the testing of chapter 3 in the following way:
Press the tuning up button for 1 second.

1. Software version of the display

After the test programme is switched on, the software version of the display (E.G. 1) appears in the preset field (digit 1 Fig. 4) after 2 seconds.

After about 1 second the software version will have disappeared again and the RAM test will start automatically.

2. RAM test

The RAM test is now carried out fully automatically.

If the test passes off positively, a "1" will be shown in the preset field (digit 1 Fig. 4) for 1 second. If the test does not pass off positively, a "0" will be displayed in the preset field for 1 second.

After this the display test starts automatically. (Also if the RAM test was not positive).

3. Display test

After the RAM test has been completed, the display test starts with a blank display.

The display is automatically tested according to table 1. All segments mentioned in the table will be visible for 1 second. If table 1 has been completed, all segments of the display will remain on (see fig. 4) until the test is ended by means of the tuning up button (press it for 1 second).

Then the set returns to the stand-by mode.

Note: as already described, this test can be ended prematurely during the automatic testing by pressing the tuning up button (for 1 second). In that case the set will adopt the stand-by mode again.

NL SERVICE TESTPROGRAMMA

De microprocessor bevat een testprogramma, welke na het inschakelen de volgende hoofdstukken volledig automatisch afwerkt.

1. Software versie van de display
2. Ram-test
3. Display-test

Inschakelen testprogramma

Het apparaat kan in de testmode worden geplaatst door gelijktijdig de toetsen "FM" en "phono" in te drukken.

Het apparaat moet hierbij in de stand-by mode staan. Het testprogramma wordt niet opgestart als de microprocessor defect is of als niet aan enkele basisvoorwaarden wordt voldaan.

Controleer dan ook eerst bij een vermeend defect in het bedieningsgedeelte de voedingsspanning, de functietoesten, het clock-sigitaal en de resetpuls.

Uitschakelen testprogramma

- a. Het testprogramma kan tijdens het testen van de hoofdstukken 1 en 2 niet verlaten worden.
- b. Het testprogramma kan tijdens het testen van hoofdstuk 3 wel verlaten worden en wel als volgt:
Druk de toets tuning up 1 seconde in.

1. Software versie van het display

Na het inschakelen van het testprogramma verschijnt in het preset veld (digit 1 Fig. 4) na 2 seconden de software versie van het display (bijv. 1). Na ongeveer 1 seconde is deze weer verdwenen en start automatisch de ram-test.

2. Ram-test

De Ram-test wordt nu dus ook volledig automatisch afgewerkt. Indien de test positief verlopen is, zal gedurende 1 seconde in het preset veld (digit 1 Fig. 4) een "1" gegeven worden. Indien niet positief verlopen, dan zal gedurende 1 seconde in het preset veld een "0" gegeven worden.

Hierna start automatisch de display test. (Ook al is de Ramtest niet positief verlopen).

3. Display-test

Na beëindiging van de Ram-test start de display-test met een blank display.

Achtereenvolgens wordt het display volgens tabel 1 automatisch getest.

Alle in de tabel genoemde segmenten zijn één seconde zichtbaar. Indien alles volgens de tabel 1 doorlopen is blijft het display met alle segmenten aan staan (zie Fig. 4), totdat de test d.m.v. de tuning up toets (1 seconde indrukken) beëindigt wordt.

Het apparaat komt dan weer in de stand-by mode.

Opmerking: zoals reeds beschreven kan deze test gedurende het automatisch testen d.m.v. de tuning up toets (1 seconde indrukken) eerder beëindigd worden. Het apparaat komt dan weer in de stand-by mode.

(F) PROGRAMME TEST DE SERVICE

Le microprocesseur comporte un programme de test qui se déroule automatiquement après que l'appareil est mis en fonction. On aura donc:

1. Logiciel de l'afficheur
2. Test de la RAM
3. Test de l'affichage

Mise en route du programme de test

L'appareil sera mis au mode de test par pression simultanée des touches "FM" et "phono", à condition que l'appareil est en position de veille.

Le programme de test n'est pas démarré si le microprocesseur est défectueux ou si certaines conditions de base ne sont pas remplies.

A cet effet, vérifier, en cas de suspicion de défectuosité dans la section de commande, avant tout, la tension d'alimentation, les touches de fonction, le signal d'horloge et l'impulsion de remise à zéro.

Mise hors fonction du programme de test

- a. Il n'y a pas moyen de quitter le programme de test pendant les tests des chapitres 1 et 2.
- b. Il y a moyen de quitter le programme de test pendant le test du chapitre 3, il suffit d'appuyer sur la touche "tuning up" pendant 1 seconde.

1. Logiciel de l'afficheur

La version du logiciel de l'afficheur apparaît 2 secondes après la mise en service du programme de test dans le champ de pré-réglage ('digit' 1 Fig. 4). (par exemple 1). Après env. 1 sec. elle disparaît et le test de la RAM débute automatiquement.

2. Test de la RAM

Le test de la RAM est alors entièrement exécuté. Si le test se déroule positivement, un "1" apparaîtra pendant une seconde ('digit' 1 Fig. 4) dans le champ de remise à zéro. Si le test n'est pas positif, un "0" apparaîtra pendant 1 seconde sur le même champ. Ensuite, le test de l'afficheur commence immédiatement (même si le test de la RAM n'a pas été positif).

3. Test de l'afficheur

Après que s'est déroulé le test de la RAM, le test de l'afficheur débute par un afficheur vierge.

Après quoi, l'afficheur est automatiquement testé dans l'ordre du tableau 1.

Tous les segments désignés dans le tableau deviennent visibles pendant une seconde. Lorsque tout est passé en revue dans la séquence du tableau 1, tous les segments de l'afficheur restent allumés

(voir fig. 4) jusqu'à ce que qu'il soit mis fin au test en pressant la touche "tuning up" pendant 1 sec.

L'appareil revient en position de veille.

Remarque: comme il avait déjà été dit plus haut, il peut être mis fin prématurément à ce test par pression (1 sec.) de la touche "tuning up". L'appareil revient alors au mode de veille.

(D) SERVICE PRÜFPROGRAMM

Der Mikroprozessor enthält ein Prüfprogramm, das nach Einschalten die folgenden Kapitel völlig automatisch erledigt.

1. Software-Ausführung des Display
2. RAM-Prüfung
3. Display-Prüfung

Einschalten des Prüfprogramms

Das Gerät kann in den Prüfbetrieb gebracht werden, dadurch dass gleichzeitig die Tasten 'FM' und 'phono' gedrückt werden.

Das Gerät muss dann im Bereitschaftsbetrieb sein. Das Prüfprogramm wird nicht angefahren, wenn der Mikroprozessor Schaden genommen hat, oder wenn nicht einige Grundbedingungen erfüllt werden.

Bei einem vermeintlichen Mangel im Bedienungsteil sind denn auch zuerst die Versorgungsspannung, die Funktionstasten, das Taktsignal und der Rücksetzimpuls zu überprüfen.

Ausschalten des Prüfprogramms

- a. Das Prüfprogramm kann während dem Prüfen der Kapitel 1 und 2 nicht verlassen werden.
- b. Das Prüfprogramm kann während dem Prüfen von Kapitel 3 wohl verlassen werden, und zwar wie folgt: Die Taste 'tuning up' 1 Sekunde drücken.

1. Software-Ausführung des Display

Nach Einschalten des Prüfprogramms erscheint im 'preset'-Feld ('digit' 1 Bild 4) nach 2 Sekunden die Software-Ausführung des Display (z.B. 1). Nach etwa 1 Sekunde ist sie wieder verschwunden und läuft automatisch die RAM-Prüfung an.

2. RAM-Prüfung

Die RAM-Prüfung wird nun also auch vollautomatisch erledigt.

Wenn die Prüfung positiv abgelaufen ist, wird für 1 Sekunde in dem 'preset'-Feld ('digit' 1 Bild 4) eine '1' gegeben werden. Falls nicht positiv abgelaufen, so wird für 1 Sekunde in dem 'preset'-Feld eine '0' gegeben werden.

Darauf läuft automatisch die Displayprüfung an (auch wenn die RAM-Prüfung nicht positiv abgelaufen ist).

3. Display-Prüfung

Nach Abschluss der RAM-Prüfung läuft die Display-Prüfung mit einem blanken Display an. Nacheinander wird das Display gemäss Tabelle 1 automatisch geprüft. Alle in der Tabelle aufgeführten Segmente sind 1 Sekunde sichtbar. Wenn alles gemäss Tabelle 1 durchlaufen ist, ist das Display mit sämtlichen Segmenten (siehe Bild 4) nach wie vor eingeschaltet, bis die Prüfung mittels der Taste 'tuning up' (1 Sekunde drücken) beendet wird.

Das Gerät gelangt dann wieder in den Bereitschaftsbetrieb.

Anmerkung: Wie bereits beschrieben, kann diese Prüfung während dem automatischen Prüfen mittels der Taste 'tuning up' (1 Sekunde drücken) früher beendet werden. Das Gerät gelangt dann wieder in den Bereitschaftsbetrieb.

I PROGRAMMA PROVA DI SERVIZIO

Il microprocessore è stato munito di un programma di prova, che una volta programmato esegue automaticamente le seguenti fasi:

1. Visualizzazione del display in versione software
2. Prova Ram
3. Prova display

Azionare il programma




E' possibile mettere l'apparecchio in posizione "testmode", schiacciando contemporaneamente i pulsanti FM e Phono, dopo di che si lascia l'apparecchio in posizione stand-by. Il programma di prova non verrà eseguito qualora il microprocessore sia difettoso o qualora non vengano rispettate le condizioni di base. Se ciò si verifica, è indicato controllare se c'è un guasto nel reparto di comando e, più precisamente nel cavo di alimentazione, nei tasti, nel timer o nell'autoreverse.

Disazionare il programma di prova

Va notate che:

- a. questo programma non va interrotto durante le fasi (1) e (2).
- b. questo programma, al contrario di quanto descritto sopra, è suscettibile di cambiamenti schiacciando il pulsante tuning up per la durata di un secondo.

Table 1

	●	Decimal point (DP)
		b and e of digit 3 (see Figs. 3, 4)
		g of digit 3 (see Figs. 3, 4)
FM, MHz		a, c, d and f of digit 3 (see Figs. 3, 4)
MW, KHz		
LW, KHz		
STEREO		
MONO		
AUTO		
MAN		
MEMO		
TUNED		
000 00		
1111 11		
222 22		
333 33		
444 44		
555 55		
666 66		
777 77		
888 88		
999 99		

All segments except decimal point (DP) go on (see Fig. 4)

1. La visualizzazione del display in versione software

Dopo che il programma di prova è stato azionato, a destra del display appare dopo per due secondi il display in versione software ('digit 1' Fig. 4). Dopo un secondo la visualizzazione sparisce nuovamente ed ha automaticamente inizio la prova Ram.

2. La prova Ram

Anche questa prova viene eseguita automaticamente. Se la prova procede senza intralci, si vedrà apparire il numero 1 ('digit 1' Fig. 4) a destra del display, se invece ci sono problemi tecnici, si vedrà apparire, sempre a destra del display (anche se la prova Ram ha avuto esiti negative).

3. La prova display

Si noti che, successivamente alla prova Ram, la prova display dà a vedere un display "bianco", dopo di che il display viene controllato automaticamente secondo il procedimento spiegato nella tabella n° 1.

Se ogni operazione è stata eseguita secondo la tabella n° 1, i dati del display resteranno visibili (si v. a proposito Fig. 4), finché la prova non verrà conclusa schiacciando per un secondo il tasto tuning up. L'apparecchio, automaticamente, si ritrova in posizione stand-by.

Si noti: però che questa prova durante la fase automatica può essere eseguita prima, schiacciando per un secondo il pulsante tuning up. L'apparecchio, automaticamente, riprende la posizione stand-by.

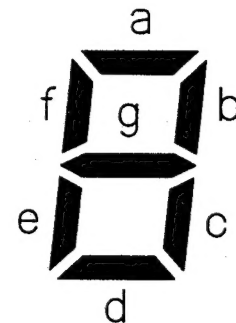
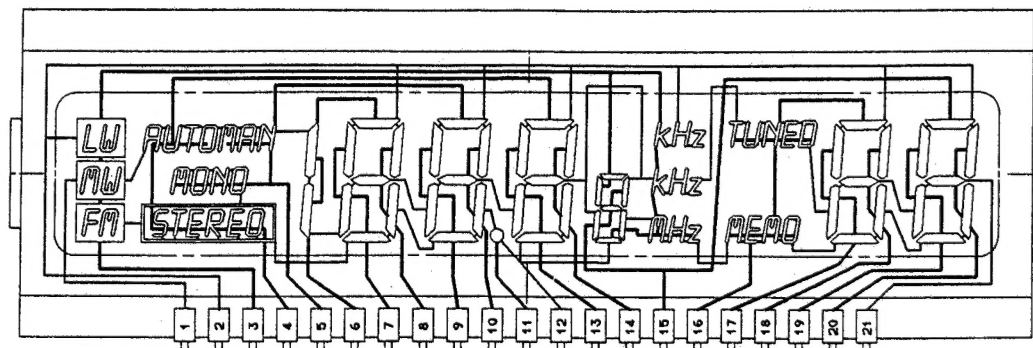


Fig. 3

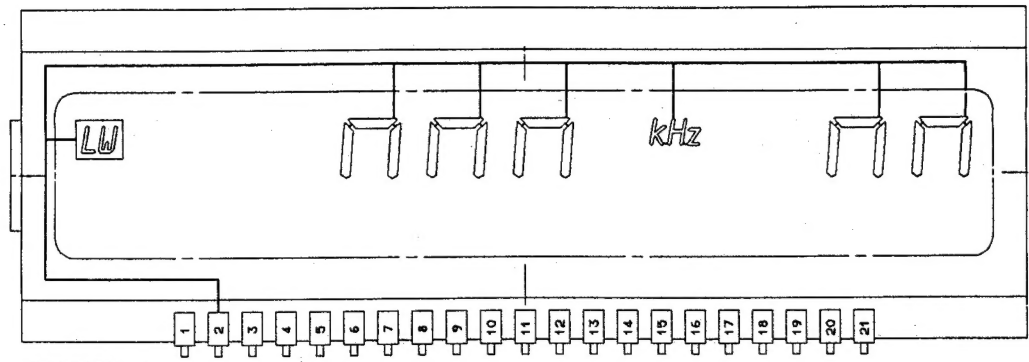


Fig. 4

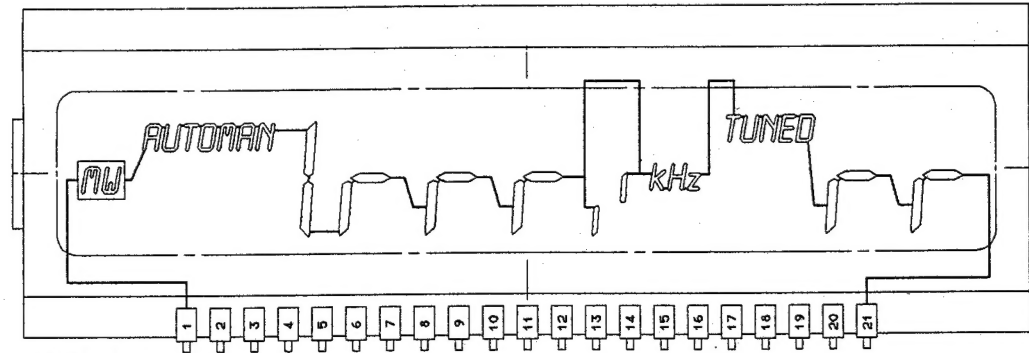
MDA.02268
T-08 932



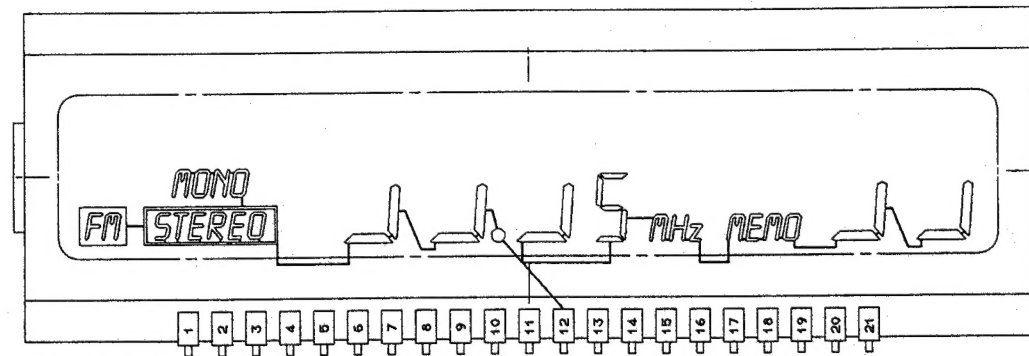
PIN 3 ... 11;
13 ... 20



COMMON 1



COMMON 2



COMMON 3

PIN-nr.	Common 1	Common 2	Common 3
1	Common 1 LW kHz	Common 2 MW kHz	FM MHz a3 c3 d3 f3 Stereo Mono
2			
3			
4			
5			
6	a6	b7 c7	d6 c6 d5 c5
7	f6	e6	
8	b6	g6	
9	f5	e5	
10	b5	g5	
11	f4 b4 a1	e4 g4 b3 e3	Decimal point Common 3 d4 c4 g3
12			
13			
14			
15			
16	a2	Tuned e2 g2 e1 g1	Memo d2 c2 d1 c1
17	f2		
18	b2		
19	f1		
20	b1		
21		Common 2	

ELECTRICAL ADJUSTMENTS AND CHECKS

General

- For the HF adjustments, the injected signals should be kept as small as possible.
- Connect the frame aerial in case AM is used.
- The AM IF amplifier is adjusted with a wobulator signal of approx 600 kHz having a sweep of 250 kHz at a rhythm of 50 Hz.

Measuring equipment used

- Power-supply equipment
- Oscilloscope
- DC millivoltmeter
- AC millivoltmeter
- Frequency counter

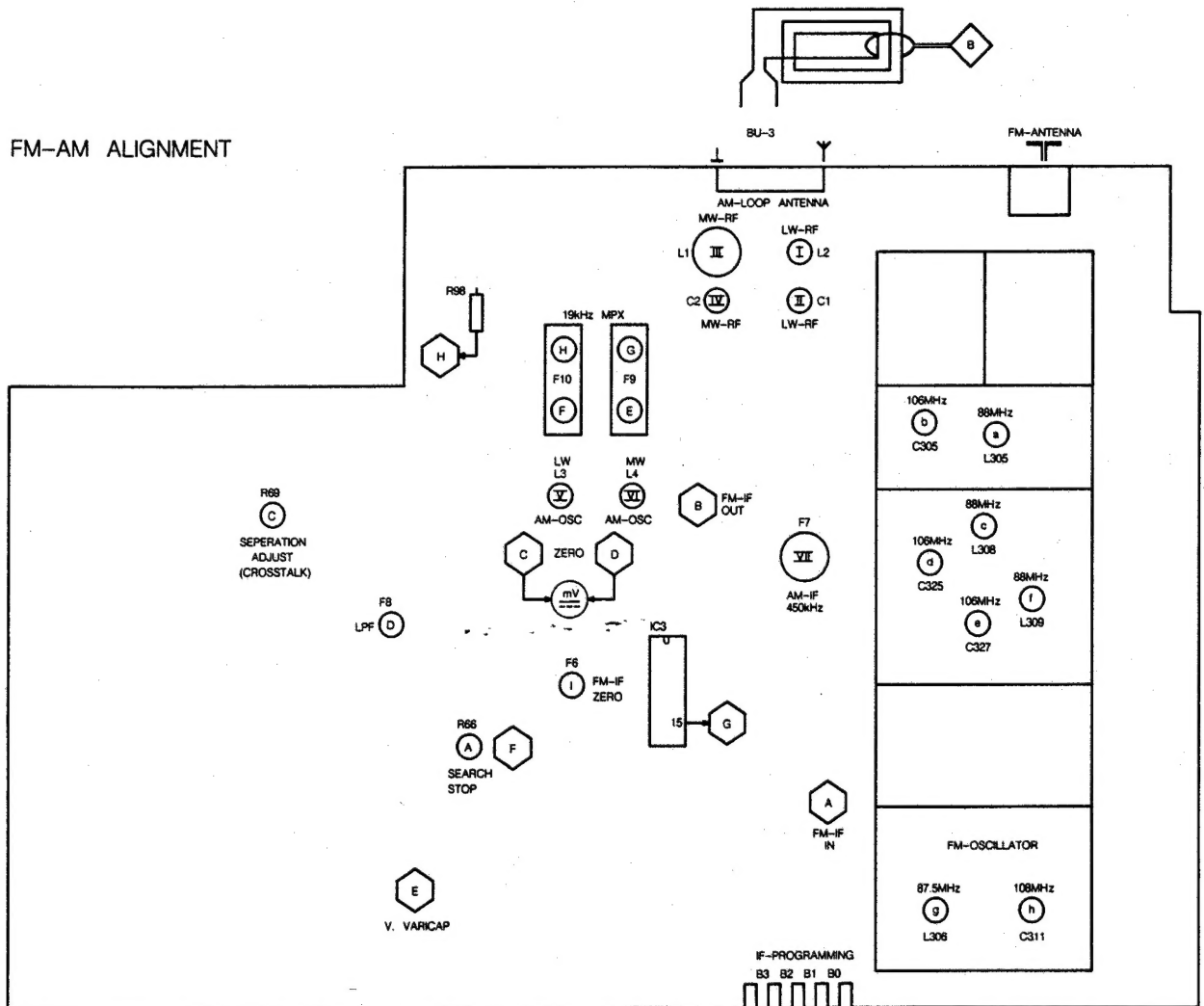
ELUCIDATIONS

- 1 Place the top of the response curve in the centre of the screen by displacing the wobulating frequency.
- 2 Adjust for maximum height and symmetry.






⬡ Measuring point

○ Trimming element






FM-AM ALIGNMENT








MDA.02205
T28/926

SK... WAVE RANGE SWITCH	 SIGNAL	 TO	DISPLAY TUNE IN	REMARKS DETUNE	 ADJUST	 OSCILLOSCOPE OR A.C. METER	 D.C. METER INDICATOR
-------------------------------	---	---	--------------------	-------------------	--	--	--








FM-IF/T.H.D.

FM	98 MHz Δf 75 kHz 1 mV	FM antenna	Display 98.00 MHz				 max.
	fo=f generator Δf =75 kHz 1 mV				 F6		  0 V \pm 30 mV

FM-RF (Oscillator)

FM	108 MHz 1 kHz mod. Δf =75 kHz	FM antenna	Display 108.00 MHz		 C311	max. ~ 	 8.5 V ...
	87,5 MHz 1 kHz mod. Δf =75 kHz		Display 87.50 MHz		 L306		 2.5 V ...

FM-RF

FM	106 MHz 1 kHz mod. Δf =75 kHz	FM antenna	Display 106.00 MHz		 C305  C325  C327	max. ~ 	
	88 MHz 1 kHz mod. Δf =75 kHz		Display 88.00 MHz		 L305  L308  L309		

↑ Repeat - Herhalen - Répéter - Wiederholen - Ricominciare

SERVICING HINTS

1. ESD



All ICs and many other semi-conductors are sensitive to electrostatic discharges (ESD).

Careless treatment during repairs may drastically reduce life.

When repairing, make sure that you are connected, via a wristlet, the same potential as the chassis of the set.

Keep components and tools at this potential as well. See Service information A86-1000 for this.

2. Display DP401






The outputs of the display drivers are not protected against external overvoltages! When testing the display with external voltages, you should interrupt the connection with IC401.

3. FM IF offset

The ceramic resonators (F1+F4) have different intermediate frequencies as a result of tolerances. Dependent on the IF jumper has to be applied or a bridge has to be opened. B0+B3 (see table). The resonators have been provided with a colour code.

4. Ceramic resonators F1 + F4



When replacing one of the ceramic resonators, take care that the colour codes of all three resonators are the same.

SK... WAVE RANGE SWITCH	 SIGNAL	 TO	DISPLAY TUNE IN	REMARKS DETUNE	 ADJUST	 OSCILLOSCOPE OR A.C. mV METER	 D.C. METER INDICATOR
-------------------------------	---	---	--------------------	-------------------	---	--	--







FM - SEARCH STOP

FM	106 MHz 15 μ V	FM antenna	106.00 MHz		 R66		 0.7 V +0.05 V
----	-----------------------	---------------	------------	--	--	--	--

FM - STEREO DECODER CROSSTALK

FM Stereo	106 MHz 45 % L mod. 1 kHz 9 % pilot 1 mV	FM antenna	106.00 MHz		 R69	 min ~ (1 kHz)	
--------------	--	---------------	------------	--	--	--	--

FM - PILOT - FILTERS

FM Stereo	106 MHz 1 mV 9 % pilot	FM antenna	106.00 MHz		 F9  F10	 min ~ 19 kHz	
					 F9  F10	 min ~ 38 kHz	

SERVICEWENKEN

1. ESD



Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op hetzelfde potentiaal. Zie hiervoor service information A86-1000.

2. Display DP401






De outputs van de display drivers in IC401 zijn niet beveiligd tegen externe overspanningen! Bij het testen van de display met externe spanningen dienen de verbindingen met IC401 onderbroken te worden.

3. FM middenfrequent offset



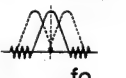

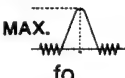

De keramische resonatoren (F1+F4) hebben verschillende middenfrequenties, als gevolg van toleranties. Afhankelijk van de middenfrequentie dient een jumper worden aangebracht of een brug worden geopend. B0+B3 (zie tabel). De resonatoren zijn voorzien van een kleurcode.

4. Keramische resonatoren F1 + F4







Bij het vervangen van een van de keramische resonatoren dient men erop te letten dat de kleurcode van alle drie resonatoren dezelfde is.

SK... WAVE RANGE SWITCH	 SIGNAL	 TO	DISPLAY TUNE IN	REMARKS DETUNE	 ADJUST	 OSCILLOSCOPE OR A.C. METER	 D.C. METER INDICATOR
-------------------------------	---	---	--------------------	-------------------	--	--	--







AM-IF

MW	558 kHz Δf 10 kHz (50 Hz)		Display 558 kHz			Center  fo 
	fo=f generator Δf 10 kHz (50 Hz)					Symetrical  MAX. fo 

AM-RF (Oscillator)

MW	522 kHz 1 kHz mod. m=30%		Display 522 kHz		 L4	 max ~	 1,0 V ...
LW	153 kHz 1 kHz mod. m=30%		Display 153 kHz		 L3		 1,8 V ...

AM-RF

MW	1449 kHz 1 kHz mod m=30%		Display 1449 kHz		 C2	 max ~	
	558 kHz 1 kHz mod m=30%		Display 558 kHz		 L1		
LW	261 kHz 1 kHz mod. m=30%		Display 261 kHz		 C1		
	162 kHz 1 kHz mod m=30%		Display 162 kHz		 L2		

† Repeat - Herhalen - Répéter - Wiederholen - Ricominciare

CONSEILS PRATIQUES

1. ESD



Tous les circuits intégrés et de nombreux sémi-conducteurs sont sensibles aux décharges électrostatiques.

Le manque de soin apporté aux réparations est susceptible de réduire considérablement la durée de vie. Veillez pendant les réparations à être connecté par l'intermédiaire d'un bracelet à résistance au même potentiel que la masse de l'appareil.

Maintenez également les composants et les accessoires à ce même potentiel. Voir à ce sujet l'information du service après-vente A86-1000.

2. Afficheur DP401

Les sorties des circuits de commande d'affichage ne sont pas protégés contre les surtensions extérieures! Si l'on teste l'afficheur avec des tensions extérieures, on devra couper les connexions avec IC401.

3. Offset FM-IF

Les résonateurs céramique (F1 à F4) possèdent des fréquences intermédiaires différentes du fait de tolérances.

Indépendamment de la fréquence intermédiaire, un câble de pontage doit être monté entre B0 - B3 (voir tableau).

Les résonateurs ont un code de couleur.

4. Résonateurs céramiques F1 + F4

Lors du remplacement de l'un des résonateurs céramiques, on ne devra pas oublier que les trois résonateurs ont la même couleur code.

D SERVICE HINWEISE

1. ESD

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD). Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren. Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes. Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten. Siehe dafür die Service Information A86-1000.

2. Display DP401

Die 'outputs' der Displaytreiber IC401 sind nicht vor externen Überspannungen geschützt! Beim Prüfen des Displays mit externen Spannungen müssen die Verbindungen mit IC401 unterbrochen werden.

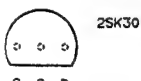
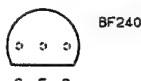
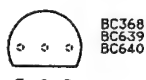
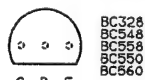
3. FM-ZF-Offset

Die Keramik Kondensatoren (F1 + F4) weisen infolge der Toleranzen unterschiedliche Zwischenfrequenzen auf. Durch die Zwischenfrequenz bedingt muss ein Brückendraht ('jumper') angebracht oder eine Brücke B0+B3 geöffnet werden (siehe Tabelle). Die Resonatoren sind mit einem Farbcode versehen.

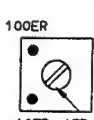
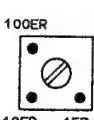
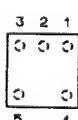
4. Keramikresonatoren F1 + F4

Beim Auswechseln eines der Keramikresonatoren ist zu beachten, dass der Farbcode aller drei Resonatoren der gleiche ist.

TOP VIEW



IN OUT



COLOUR CODE FOR FILTERS

ABSOLUTELY NECESSARY FOR THE SAFETY OF THE SET THESE COMPONENTS MEET THE SAFETY REQUIREMENTS ACCORDING TO VDE OR IEC. RESP. AND MUST BE REPLACED BY PARTS OF SAME SPECIFICATION ONLY.

I CONSIGLI PER LA RIPARAZIONE

1. ESD

Tutti gli IC e molti altri semiconduttori sono sensibili alle scariche elettrostatiche (ESD). la non attenzione durante la riparazione può ridurre drasticamente la vita di questi componenti. Durante la riparazione bisogna aver cura di essere collegati allo stesso potenziale dello chassis dell'apparecchio. Teneri i componenti e gli attrezzi a questo potenziale. Vedere l'informazione di servizio A-86-1000.

2. Display DP401

Le uscite del pilota display non sono protette contro sovraccarichi esterni. Quando si eseguono controlli sul display con tensioni esterne, interrompere i collegamenti con IC401

3. Offset FM-FI

I resonatori ceramici (da F1 a F4) hanno frequenze intermedie diverse dal fatto delle tolleranze diverse. Indipendentemente dalla frequenza intermedia, un filo di ponticello deve essere montato o un ponticello, aperto fra B0+B3 (vedi tabella).

4. Risonatori ceramici F1 + F4

Quando si sostituisce uno dei resonatori ceramici, assicurarsi che il codice colore di tutti e tre i resonatori sia.

FM-IF program

IF (MHz)	Jumper				Filter color
	B3	B2	B1	B0	
10.6500	0	1	0	0	Black
10.6750	0	1	1	0	Blue
10.7000	1	0	0	0	Red
10.7225	1	0	1	0	Orange
10.7500	1	1	0	0	White

0 = jumper open

1 = jumper closed

- CR16 0.2W (KSW0204 DIN)
- CR37 0.5W (KSW0411 DIN)
- SFR16T (MSW0204 DIN)
- CR25 0.33W (KSW0207 DIN)
- CR52 0.67W (KSW0617 DIN)
- SFR25H 0.6W (MSW0207 DIN)
- LOW FLAMMABILITY
- METAL OXYDE
- SAFETY RESISTOR

CAPACITOR

ELECTROLYTIC

TANTALUM ELECTROLYTIC

FOIL

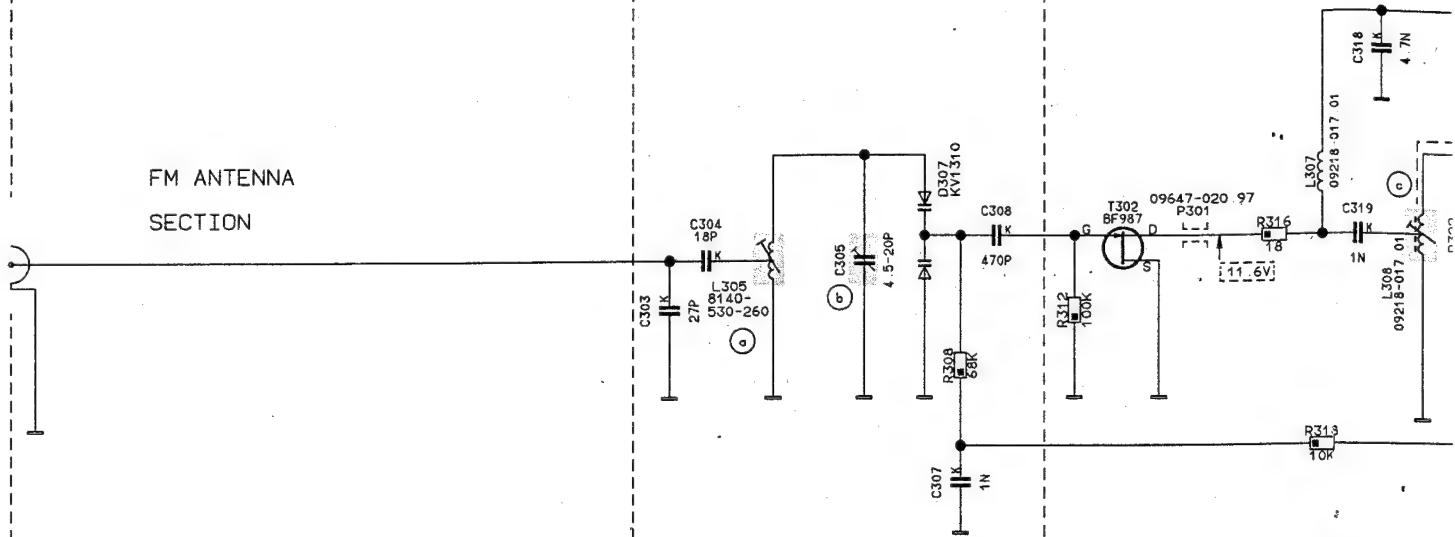
CERAMIC

MULTILAYER

POLYPROPYLEN (KS-KP)

RF+IF PANEL 1

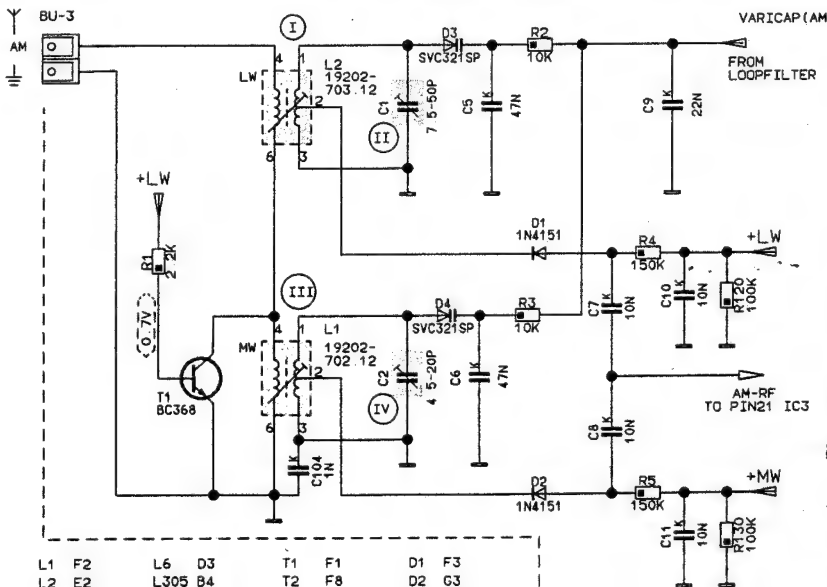
FM ANTENNA SECTION



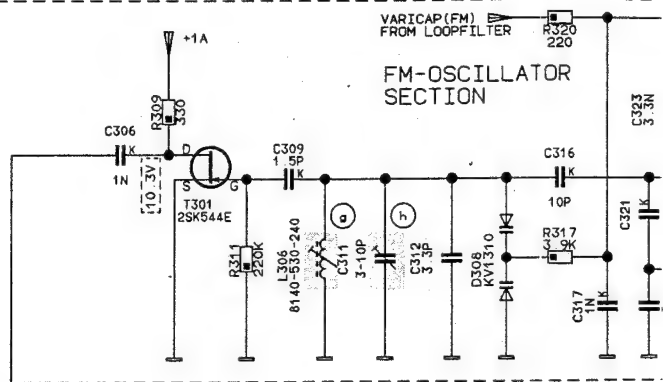
DC-VOLTAGES MEASURED AGAINST GROUND
WITHOUT ANTENNA SIGNAL
AND TUNED TO A DEAD SPOT, EXCEPT FM STEREO

- AM
- FM
- MW
- LW
- FM STEREO
- STEREO

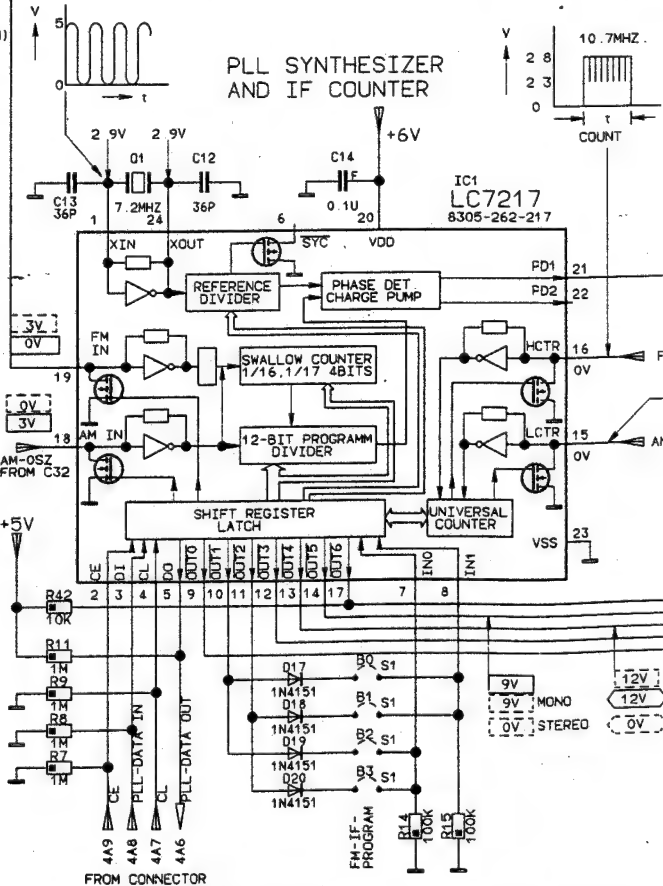
AM ANTENNA SECTION



FM-OSCILLATOR SECTION

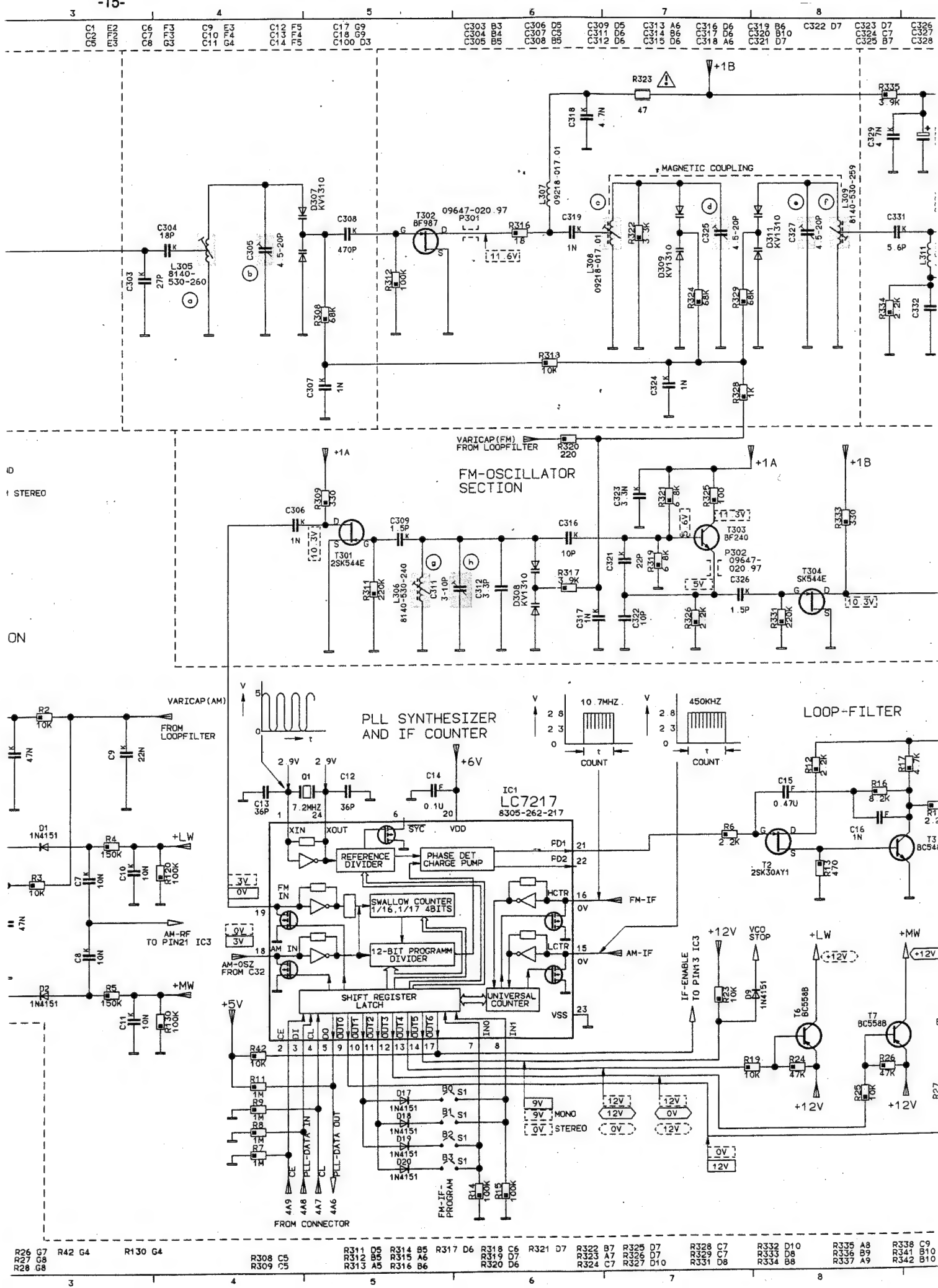


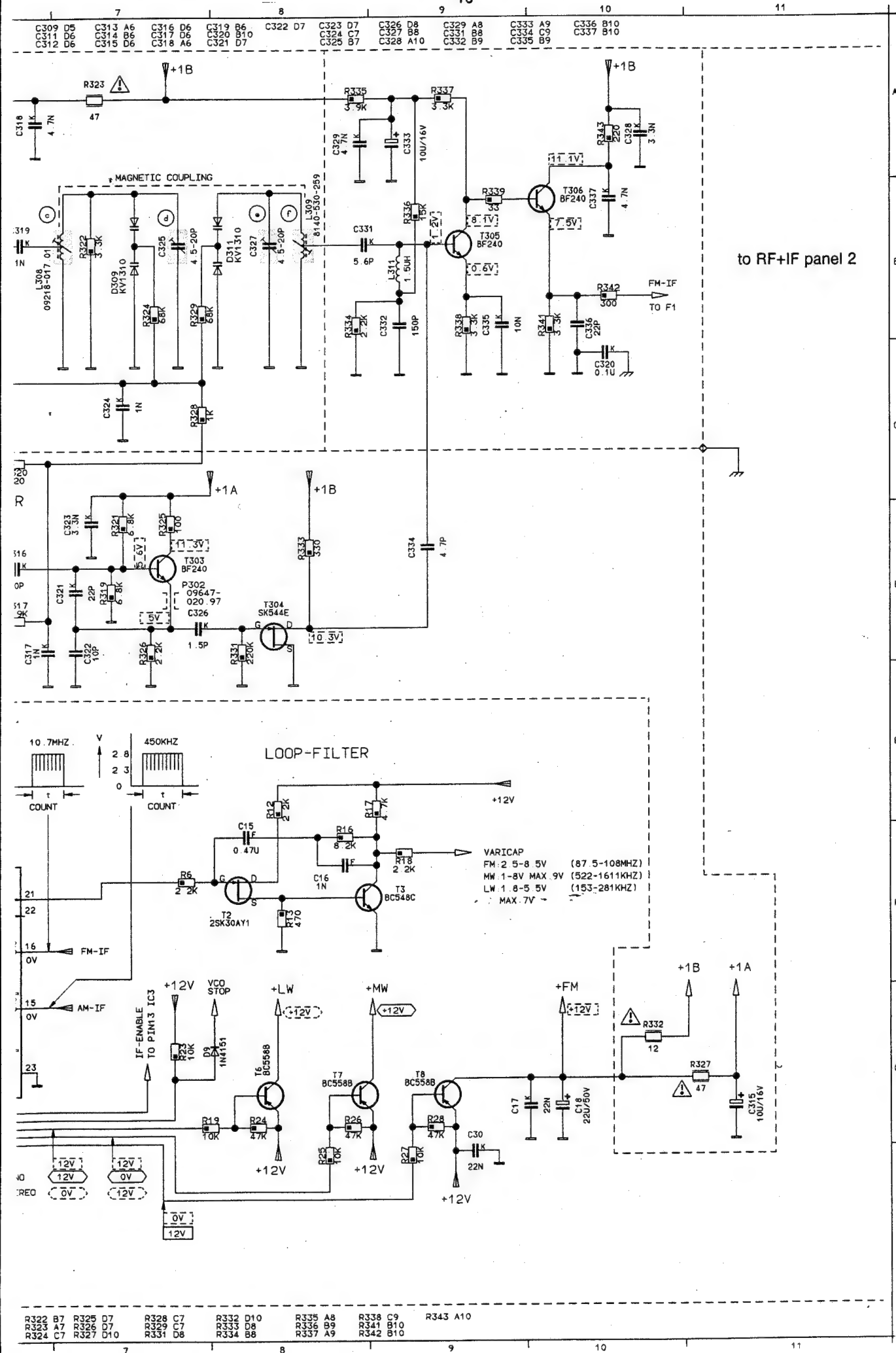
PLL SYNTHESIZER AND IF COUNTER



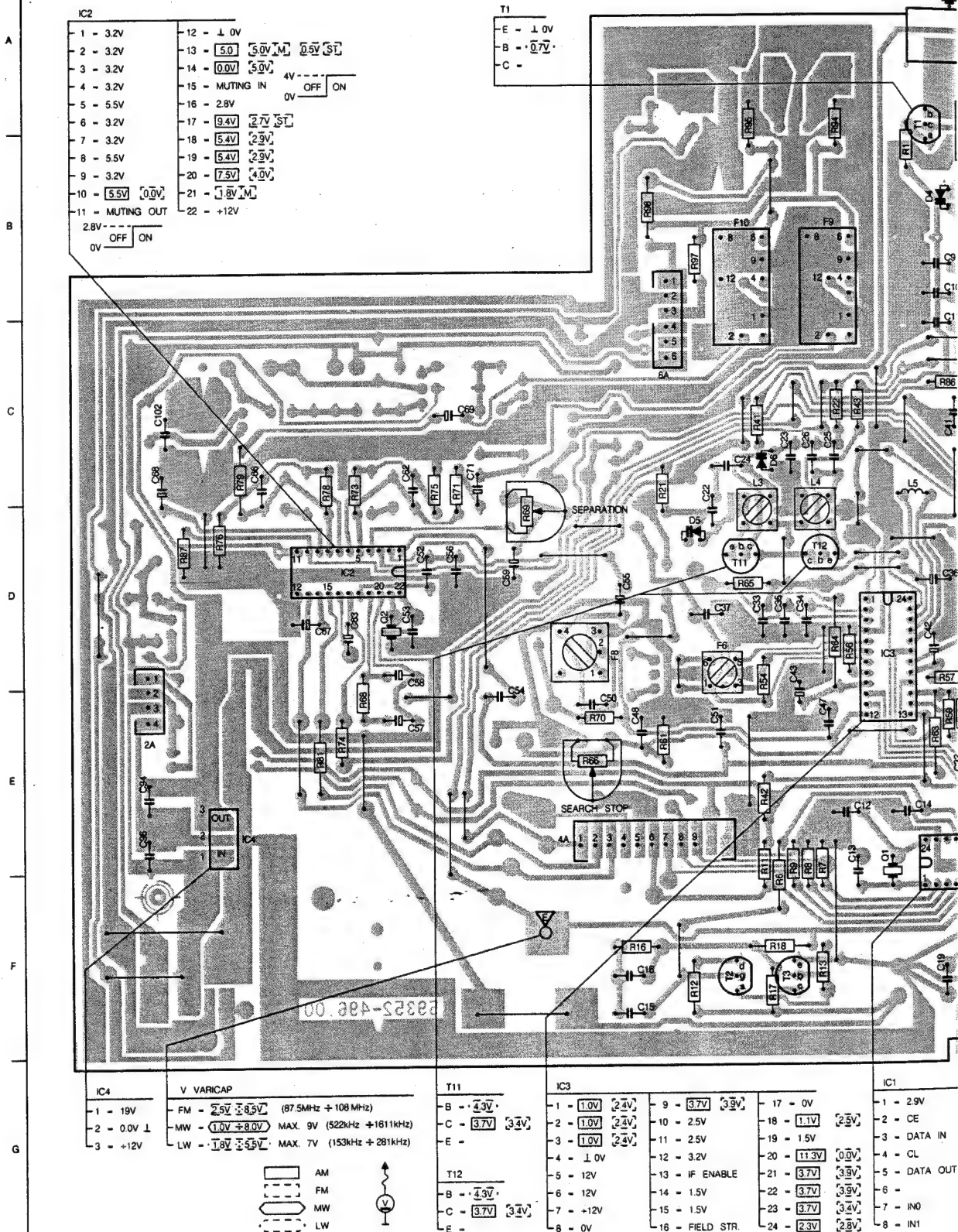
L1 F2	L6 D3	T1 F1	D1 F3
L2 E2	L305 B4	T2 F8	D2 G3
IC1 F5	L306 D5	T6 G7	D3 E2
	L307 B6	T7 G8	D4 F2
	L308 B7	T8 G8	D9 F8
Q1 F5	L309 B8	T301 C5	D17 G5
	L311 B9	T302 B5	D18 H5
		T303 D7	D19 H5
		T304 D8	D20 H5
		T305 B9	
		T306 B10	
			D303 B2
			D307 B4
			D308 D6
			D309 B7
			D311 B8

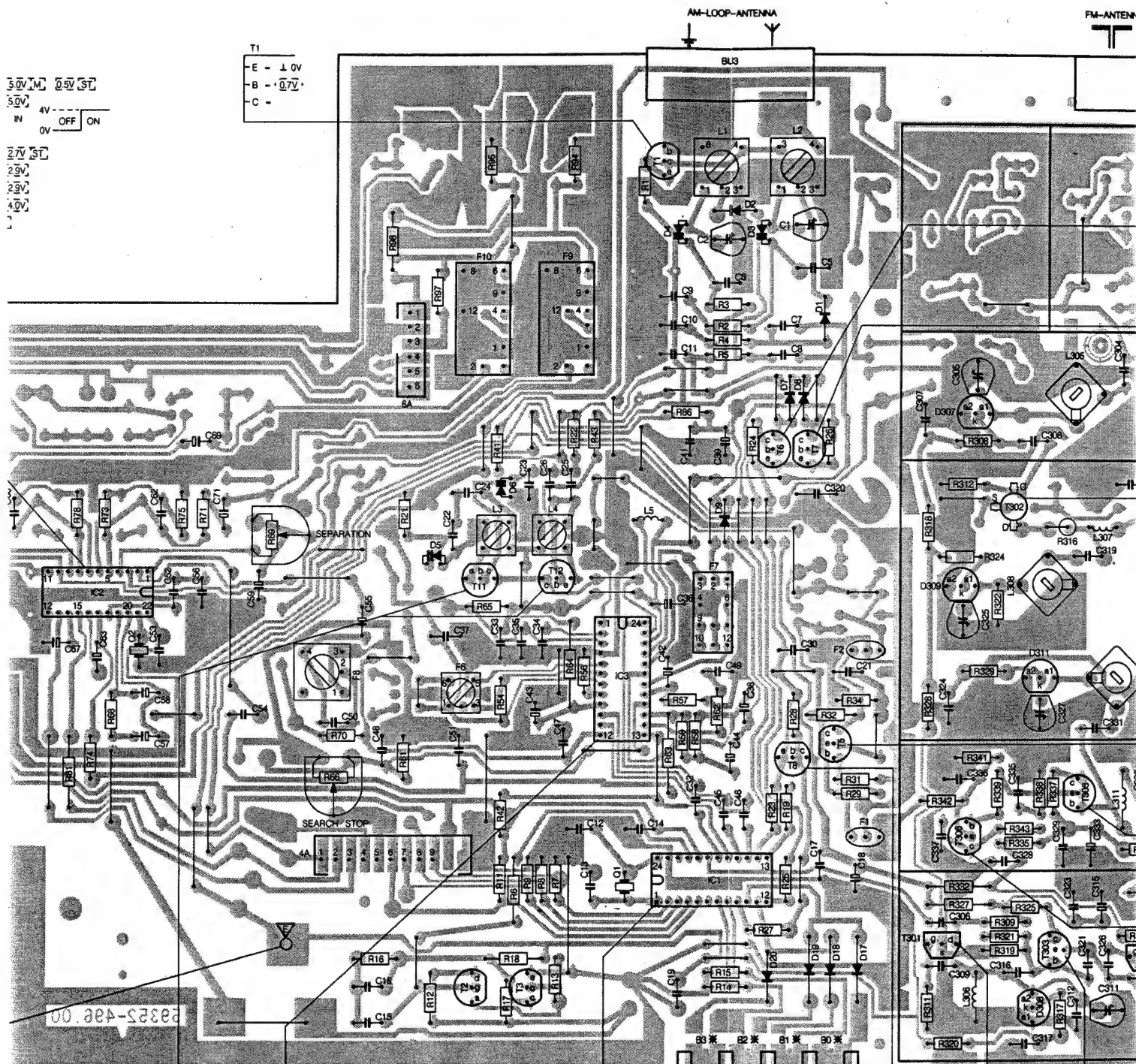
R1 F1	R6 F7	R7 H4	R13 F8	R18 F9											R311 D5	R314 B5	R317 D6	R318 C6	R321 D7	R322 B7	R323 A7	R324 C7	R325 B7	R326 A7	R327 B7	R328 C7	R329 D7	R330 E7	R331 F7	R332 G7	R333 H7	R334 I7	R335 J7	R336 K7	R337 L7	R338 M7	R339 N7	R340 O7	R341 P7	R342 Q7	R343 R7	R344 S7	R345 T7	R346 U7	R347 V7	R348 W7	R349 X7	R350 Y7	R351 Z7	R352 AA7	R353 AB7	R354 AC7	R355 AD7	R356 AE7	R357 AF7	R358 AG7	R359 AH7	R360 AI7	R361 AJ7	R362 AK7	R363 AL7	R364 AM7	R365 AN7	R366 AO7	R367 AP7	R368 AQ7	R369 AR7	R370 AS7	R371 AT7	R372 AU7	R373 AV7	R374 AW7	R375 AX7	R376 AY7	R377 AZ7	R378 BA7	R379 BB7	R380 BC7	R381 BD7	R382 BE7	R383 BF7	R384 BG7	R385 BH7	R386 BI7	R387 BJ7	R388 BK7	R389 BL7	R390 BM7	R391 BN7	R392 BO7	R393 BP7	R394 BQ7	R395 BR7	R396 BS7	R397 BT7	R398 BU7	R399 BV7	R400 BW7	R401 BX7	R402 BY7	R403 BZ7	R404 CA7	R405 CB7	R406 CC7	R407 CD7	R408 CE7	R409 CF7	R410 CG7	R411 CH7	R412 CI7	R413 CJ7	R414 CK7	R415 CL7	R416 CM7	R417 CN7	R418 CO7	R419 CP7	R420 CQ7	R421 CR7	R422 CS7	R423 CT7	R424 CU7	R425 CV7	R426 CW7	R427 CX7	R428 CY7	R429 CZ7	R430 DA7	R431 DB7	R432 DC7	R433 DD7	R434 DE7	R435 DF7	R436 DG7	R437 DH7	R438 DI7	R439 DJ7	R440 DK7	R441 DL7	R442 DM7	R443 DN7	R444 DO7	R445 DP7	R446 DQ7	R447 DR7	R448 DS7	R449 DT7	R450 DU7	R451 DV7	R452 DW7	R453 DX7	R454 DY7	R455 DZ7	R456 EA7	R457 EB7	R458 EC7	R459 ED7	R460 EE7	R461 EF7	R462 EG7	R463 EH7	R464 EI7	R465 EJ7	R466 EK7	R467 EL7	R468 EM7	R469 EN7	R470 EO7	R471 EP7	R472 EQ7	R473 ER7	R474 ES7	R475 ET7	R476 EU7	R477 EV7	R478 EW7	R479 EX7	R480 EY7	R481 EZ7	R482 FA7	R483 FB7	R484 FC7	R485 FD7	R486 FE7	R487 FF7	R488 FG7	R489 FH7	R490 FI7	R491 FJ7	R492 FK7	R493 FL7	R494 FM7	R495 FN7	R496 FO7	R497 FP7	R498 FQ7	R499 FR7	R500 FS7	R501 FT7	R502 FU7	R503 FV7	R504 FW7	R505 FX7	R506 FY7	R507 FZ7	R508 GA7	R509 GB7	R510 GC7	R511 GD7	R512 GE7	R513 GF7	R514 GH7	R515 GI7	R516 GJ7	R517 GK7	R518 GL7	R519 GM7	R520 GN7	R521 GO7	R522 GP7	R523 GQ7	R524 GR7	R525 GS7	R526 GT7	R527 GU7	R528 GV7	R529 GW7	R530 GX7	R531 GY7	R532 GZ7	R533 HA7	R534 HB7	R535 HC7	R536 HD7	R537 HE7	R538 HF7	R539 HG7	R540 HI7	R541 HJ7	R542 HK7	R543 HL7	R544 HM7	R545 HN7	R546 HO7	R547 HP7	R548 HQ7	R549 HR7	R550 HS7	R551 HT7	R552 HU7	R553 HV7	R554 HW7	R555 HX7	R556 HY7	R557 HZ7	R558 IA7	R559 IB7	R560 IC7	R561 ID7	R562 IE7	R563 IF7	R564 IG7	R565 IH7	R566 IJ7	R567 IK7	R568 IL7	R569 IM7	R570 IN7	R571 IO7	R572 IP7	R573 IQ7	R574 IR7	R575 IS7	R576 IT7	R577 IU7	R578 IV7	R579 IW7	R580 IX7	R581 IY7	R582 IZ7	R583 JA7	R584 JB7	R585 JC7	R586 JD7	R587 JE7	R588 JF7	R589 JG7	R590 JH7	R591 JI7	R592 JJ7	R593 JK7	R594 JL7	R595 JM7	R596 JN7	R597 JO7	R598 JP7	R599 JQ7	R600 JR7	R601 JS7	R602 JT7	R603 JU7	R604 JV7	R605 JW7	R606 JX7	R607 JY7	R608 JZ7	R609 KA7	R610 KB7	R611 KC7	R612 KD7	R613 KE7	R614 KF7	R615 KG7	R616 KH7	R617 KI7	R618 KJ7	R619 KK7	R620 KL7	R621 KM7	R622 KN7	R623 KO7	R624 KP7	R625 KQ7	R626 KR7	R627 KS7	R628 KT7	R629 KU7	R630 KV7	R631 KW7	R632 KX7	R633 KY7	R634 KZ7	R635 LA7	R636 LB7	R637 LC7	R638 LD7	R639 LE7	R640 LF7	R641 LG7	R642 LH7	R643 LI7	R644 LJ7	R645 LM7	R646 LN7	R647 LO7	R648 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UG7	R871 UH7	R872 UI7	R873 UJ7	R874 UK7	R875 UL7	R876 UM7	R877 UN7	R878 UO7	R879 UP7	R880 UQ7	R881 UR7	R882 US7	R883 UT7	R884 UJ7	R885 UV7	R886 UW7	R887 UX7	R888 UY7	R889 UZ7	R890 VA7	R891 VB7	R892 VC7	R893 VD7	R894 VE7	R895 VF7	R896 VG7	R897 VH7	R898 VI7	R899 VJ7	R900 VK7	R901 VL7	R902 VM7	R903 VN7	R904 VO7	R905 VP7	R906 VQ7	R907 VR7	R908 VS7	R909 VT7	R910 VU7	R911 VV7	R912 VW7	R913 VX7	R914 VY7	R915 VZ7	R916 WA7	R917 WB7	R918 WC7	R919 WD7	R920 WE7	R921 WF7	R922 WG7	R923 WH7	R924 WI7	R925 WJ7	R926 WK7	R927 WL7	R928 WM7	R929 WN7	R930 WO7	R931 WP7	R932 WQ7	R933 WR7	R934 WS7	R935 WT7	R936 WU7	R937 WV7	R938 WX7	R939 WY7	R940 WZ7	R941 XA7	R942 XB7	R943 XC7	R944 XD7	R945 XE7	R946 XF7	R947 XG7	R948 XH7	R949 XI7	R950 XJ7	R951 XK7	R952 XL7	R953 XM7	R954 XN7	R955 XO7	R956 XP7	R957 XQ7	R958 XR7	R959 XS7	R960 XT7	R961 XU7	R962 XV7	R963 XW7	R964 XX7	R965 XY7	R966 XZ7	R967 YA7	R968 YB7	R969 YC7	R970 YD7	R971 YE7	R972 YF7	R973 YG7	R974 YH7	R975 YI7	R976 YJ7	R977 YK7	R978 YL7	R979 YM7	R980 YN7	R981 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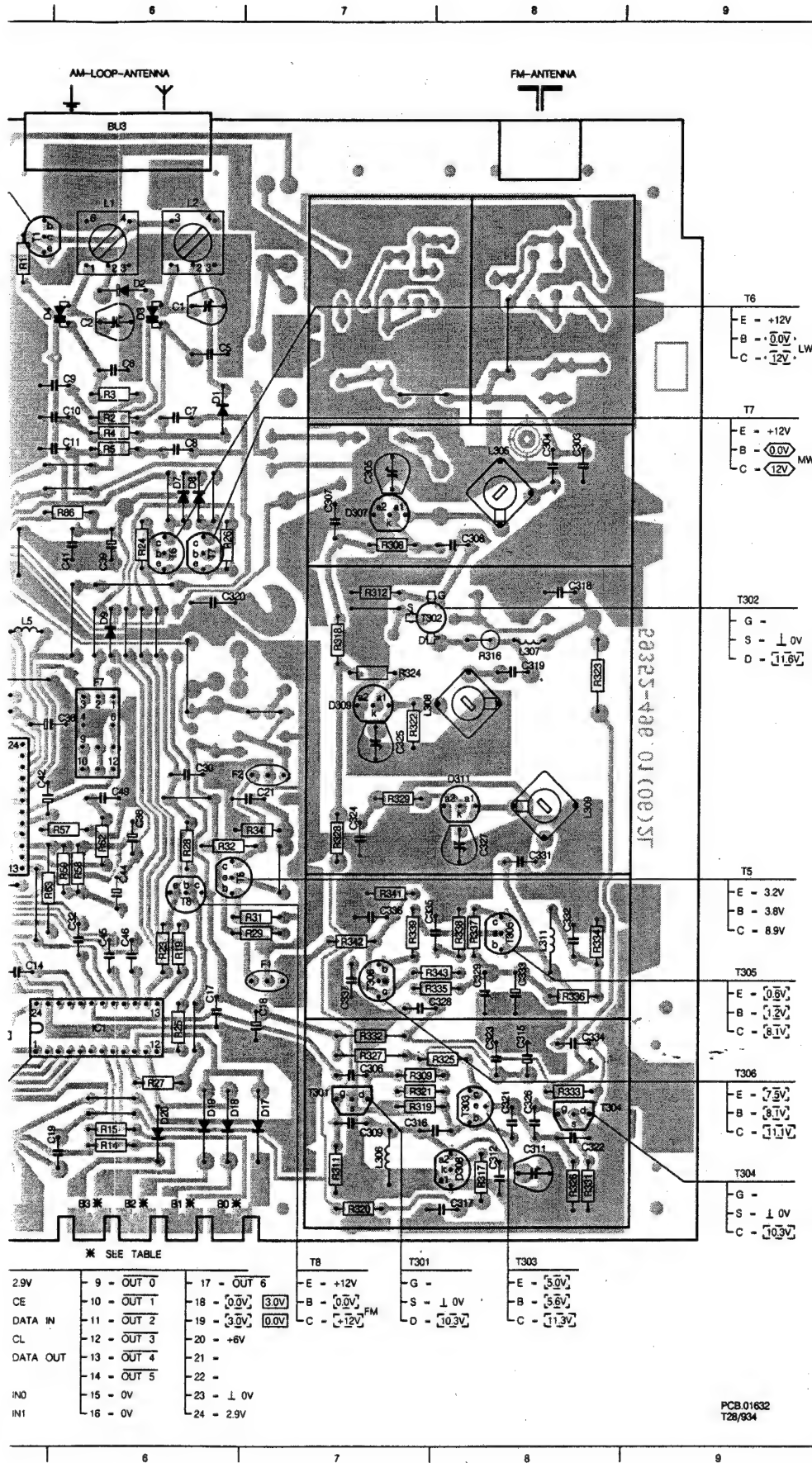


RF+IF PANEL





<p>(87.5MHz + 108 MHz)</p> <p>MAX. 9V (522kHz + 1611kHz)</p> <p>MAX. 7V (153kHz + 281kHz)</p> <p>AM</p> <p>FM</p> <p>MW</p> <p>LW</p>		<p>T11</p> <p>B - 2.3V</p> <p>C - 3.7V 3.4V</p> <p>E -</p> <p>T12</p> <p>B - 2.3V</p> <p>C - 3.7V 3.4V</p> <p>E -</p>	<p>IC3</p> <table><tr><td>1 - 1.0V 2.4V</td><td>9 - 3.7V 3.9V</td><td>17 - 0V</td></tr><tr><td>2 - 1.0V 2.4V</td><td>10 - 2.5V</td><td>18 - 1.1V 2.5V</td></tr><tr><td>3 - 1.0V 2.4V</td><td>11 - 2.5V</td><td>19 - 1.5V</td></tr><tr><td>4 - 1.0V</td><td>12 - 3.2V</td><td>20 - 11.3V 0.0V</td></tr><tr><td>5 - 12V</td><td>13 - IF ENABLE</td><td>21 - 3.7V 3.9V</td></tr><tr><td>6 - 12V</td><td>14 - 1.5V</td><td>22 - 3.7V 3.9V</td></tr><tr><td>7 - +12V</td><td>15 - 1.5V</td><td>23 - 3.7V 3.4V</td></tr><tr><td>8 - 0V</td><td>16 - FIELD STR.</td><td>24 - 2.3V 2.8V</td></tr></table>	1 - 1.0V 2.4V	9 - 3.7V 3.9V	17 - 0V	2 - 1.0V 2.4V	10 - 2.5V	18 - 1.1V 2.5V	3 - 1.0V 2.4V	11 - 2.5V	19 - 1.5V	4 - 1.0V	12 - 3.2V	20 - 11.3V 0.0V	5 - 12V	13 - IF ENABLE	21 - 3.7V 3.9V	6 - 12V	14 - 1.5V	22 - 3.7V 3.9V	7 - +12V	15 - 1.5V	23 - 3.7V 3.4V	8 - 0V	16 - FIELD STR.	24 - 2.3V 2.8V	<p>IC1</p> <p>* SEE TABLE</p> <table><tr><td>1 - 2.9V</td><td>9 - OUT 0</td><td>17 - OUT 6</td></tr><tr><td>2 - CE</td><td>10 - OUT 1</td><td>18 - 0.0V 3.0V</td></tr><tr><td>3 - DATA IN</td><td>11 - OUT 2</td><td>19 - 3.0V 0.0V</td></tr><tr><td>4 - CL</td><td>12 - OUT 3</td><td>20 - +6V</td></tr><tr><td>5 - DATA OUT</td><td>13 - OUT 4</td><td>21 -</td></tr><tr><td>6 -</td><td>14 - OUT 5</td><td>22 -</td></tr><tr><td>7 - IN0</td><td>15 - 0V</td><td>23 - 1.0V</td></tr><tr><td>8 - IN1</td><td>16 - 0V</td><td>24 - 2.9V</td></tr></table>	1 - 2.9V	9 - OUT 0	17 - OUT 6	2 - CE	10 - OUT 1	18 - 0.0V 3.0V	3 - DATA IN	11 - OUT 2	19 - 3.0V 0.0V	4 - CL	12 - OUT 3	20 - +6V	5 - DATA OUT	13 - OUT 4	21 -	6 -	14 - OUT 5	22 -	7 - IN0	15 - 0V	23 - 1.0V	8 - IN1	16 - 0V	24 - 2.9V	<p>T8</p> <p>E - +12V</p> <p>B - 0.0V FM</p> <p>C - -12V</p>	<p>T301</p> <p>G -</p> <p>S - 1.0V</p> <p>D - 10.3V</p>	<p>T303</p> <p>E - 5.0V</p> <p>B - 5.0V</p> <p>C - 1.1V</p>
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7 - IN0	15 - 0V	23 - 1.0V																																																					
8 - IN1	16 - 0V	24 - 2.9V																																																					



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4A	E 3	F2	D 7	T302	C 8
6A	C 4	F6	D 4	T303	C 8
B0	F 6	F7	D 6	T304	E 8
B1	F 6	F8	D 4	T305	E 8
B2	F 6	F9	B 5	T306	E 7
B3	F 6	I C1	E 8	T5	E 6
BU3	A 6	I C2	D 2	T6	C 6
C1	B 6	I C3	D 2	T7	C 6
C10	B 6	I C4	E 2	T8	E 6
C102	C 1	L1	A 6		
C103	A 4	L2	A 6		
C11	C 6	L3	C 5		
C12	E 5	L305	C 8		
C13	E 5	L306	F 7		
C14	E 5	L307	D 8		
C15	F 4	L308	D 7		
C16	F 4	L309	D 8		
C17	E 6	L311	E 8		
C18	E 7	L4	C 5		
C19	F 6	L5	C 5		
C2	B 6	Q1	E 5		
C21	D 7	Q2	D 2		
C22	C 4	R1	B 5		
C23	C 5	R11	E 5		
C24	C 4	R12	F 4		
C25	C 5	R13	F 5		
C26	C 5	R14	F 6		
C30	D 6	R15	F 6		
C303	C 8	R16	F 4		
C304	C 8	R17	F 5		
C305	C 7	R18	F 5		
C306	C 7	R19	E 6		
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C316	F 7	R26	C 6		
C317	F 7	R27	F 6		
C318	C 8	R28	E 6		
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C336	E 7	R326	F 8		
C337	E 7	R327	F 7		
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C36	D 6	R331	F 8		
C37	D 4	R332	F 7		
C38	D 6	R333	F 8		
C39	C 6	R334	E 8		
C41	C 6	R335	E 8		
C42	D 5	R336	E 8		
C43	D 5	R337	E 8		
C44	E 6	R338	E 8		
C45	E 6	R339	E 7		
C46	E 6	R34	D 7		
C47	E 6	R341	E 7		
C48	E 4	R342	E 7		
C49	D 6	R343	E 8		
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C66	C 2	R64	D 5		
C67	D 2	R65	D 4		
C68	C 1	R66	E 4		
C69	C 3	R68	E 2		
C7	B 6	R69	D 3		
C71	C 3	R7	E 5		
C8	C 6	R70	E 4		
C9	B 6	R71	C 3		
C94	E 1	R73	C 2		
C96	E 1	R74	C 2		
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D17	F 7	R76	D 1		
D18	F 6	R78	C 2		
D19	F 6	R79	C 2		
D2	B 6	R8	E 5		
D20	F 6	R80	C 1		
D3	B 6	R81	E 2		
D305	B 8	R86	C 6		
D307	C 7	R87	D 1		
D308	F 8	R9	E 5		
D309	D 7	R94	A 5		
D311	D 8	R95	A 4		
D4	B 5	R97	B 4		
D5	D 4	R98	B 4		
D6	C 5	T1	A 5		
D7	C 6	T11	D 4		
D8	C 6	T12	D 5		
D9	C 6	T2	F 4		
F1	E 7	T3	F 5		

RF+IF PANEL 2

AM-RF/IF AND FM-IF

AM OSCILLATOR SECTION

STEREO DECODER

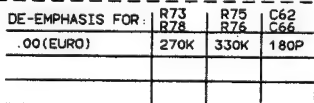
DE-EMPHASIS

DC-VOLTAGES MEASURED AGAINST GROUND
WITHOUT ANTENNA SIGNAL
AND TUNED TO A DEAD SPOT, EXCEPT FM STEREO

- AM
- FM
- MW
- LW
- FM STEREO
- STEREO

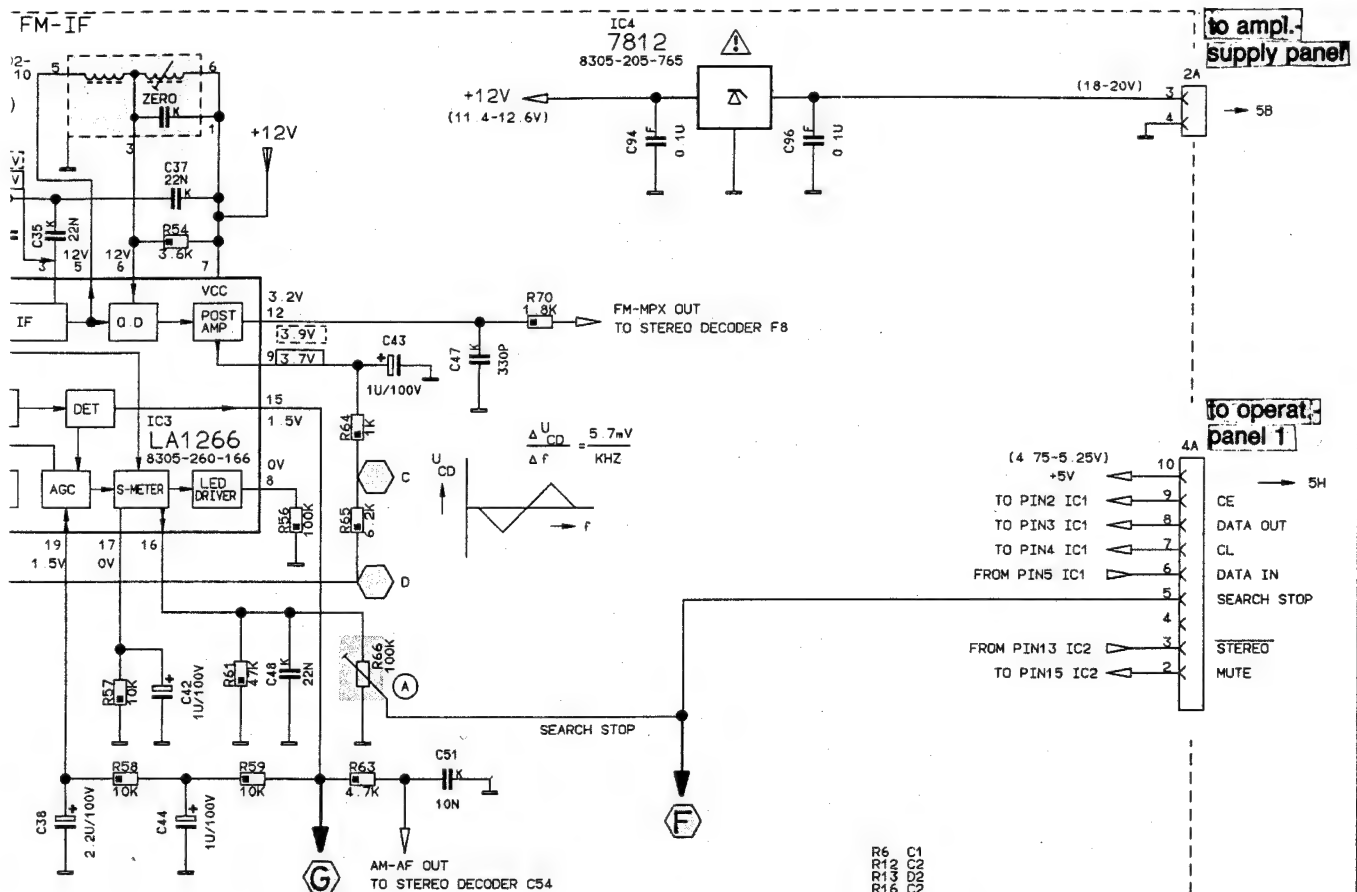
DE-EMPHASIS FOR:	R73	R75	C52
.00 (EURO)	270K	330K	180P

+12V -
(11 4-12.6



MPX-FILTER

F10
19202-704.12



Q2 E2

F1 A1
F2 A2
F3 A3
F4 A4
F5 A5
F6 A6
F7 A7
F8 A8
F9 A9
F10 A10

L3 L4
L5 L6

D5 D6
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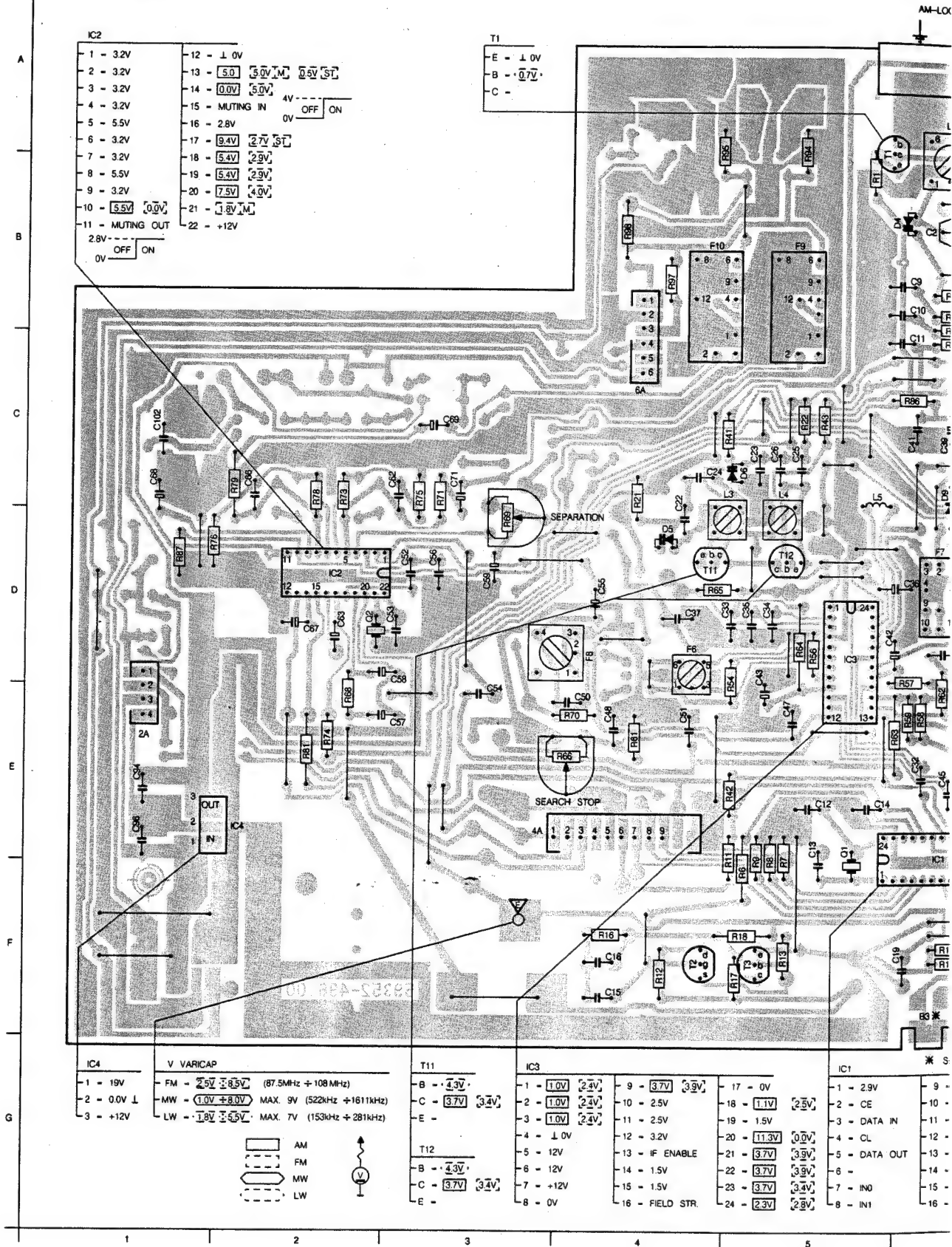
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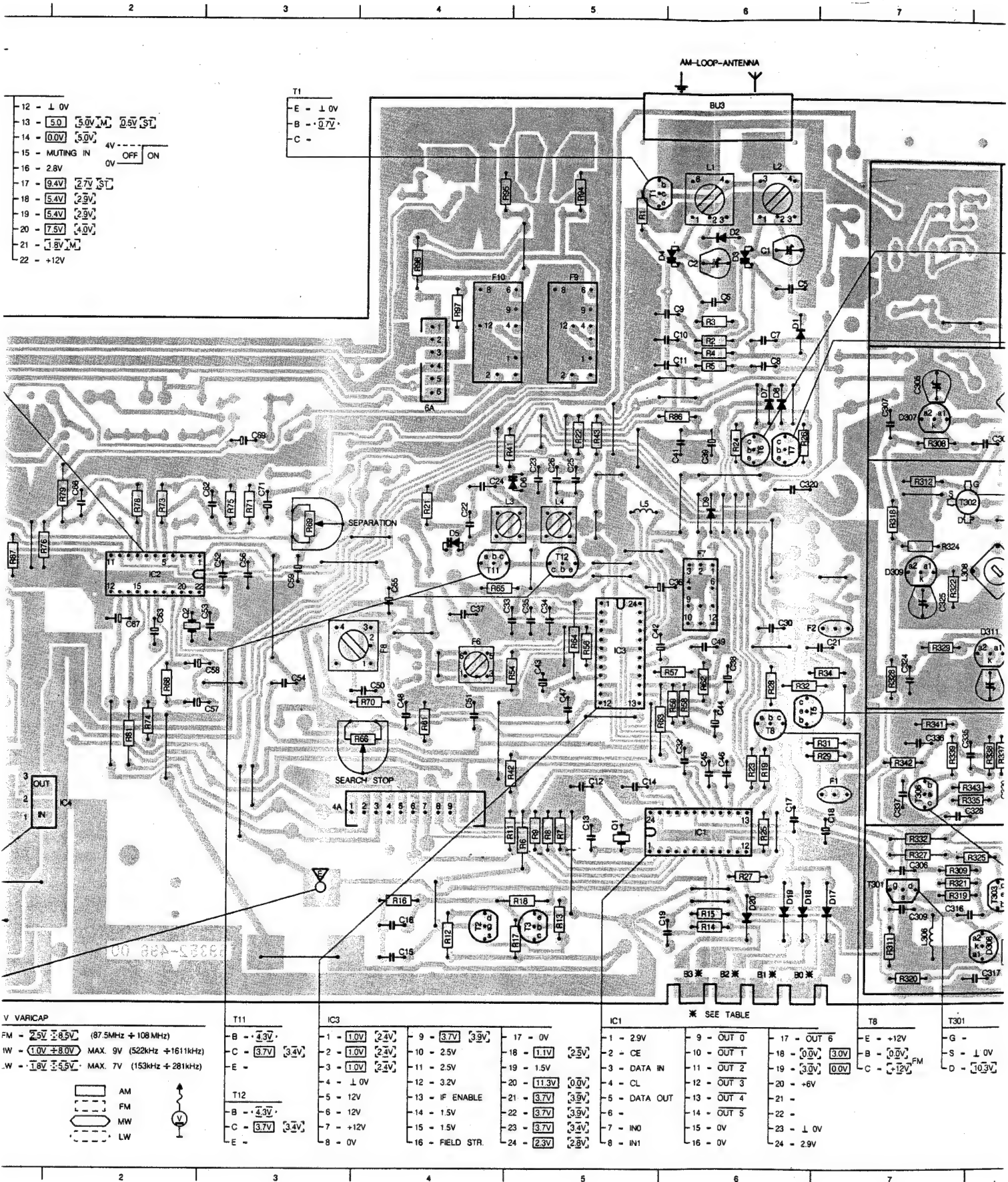
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RF+IF PANEL





- 12 - 1.0V
- 13 - 5.0V 3.0V 2.5V 3V
- 14 - 0.0V 5.0V
- 15 - MUTING IN 4V OFF ON
- 16 - 2.8V
- 17 - 9.4V 2.7V 3V
- 18 - 5.4V 2.9V
- 19 - 5.4V 2.9V
- 20 - 7.5V 4.0V
- 21 - 1.8V 1.0V
- 22 - +12V

- T1
- E - 1.0V
 - B - 0.7V
 - C -

V. VARICAP

FM - 2.5V ± 0.5V (87.5MHz ± 108MHz)

IW - 1.0V ± 0.0V MAX. 9V (522kHz ± 1611kHz)

.W - 1.8V ± 0.5V MAX. 7V (153kHz ± 281kHz)

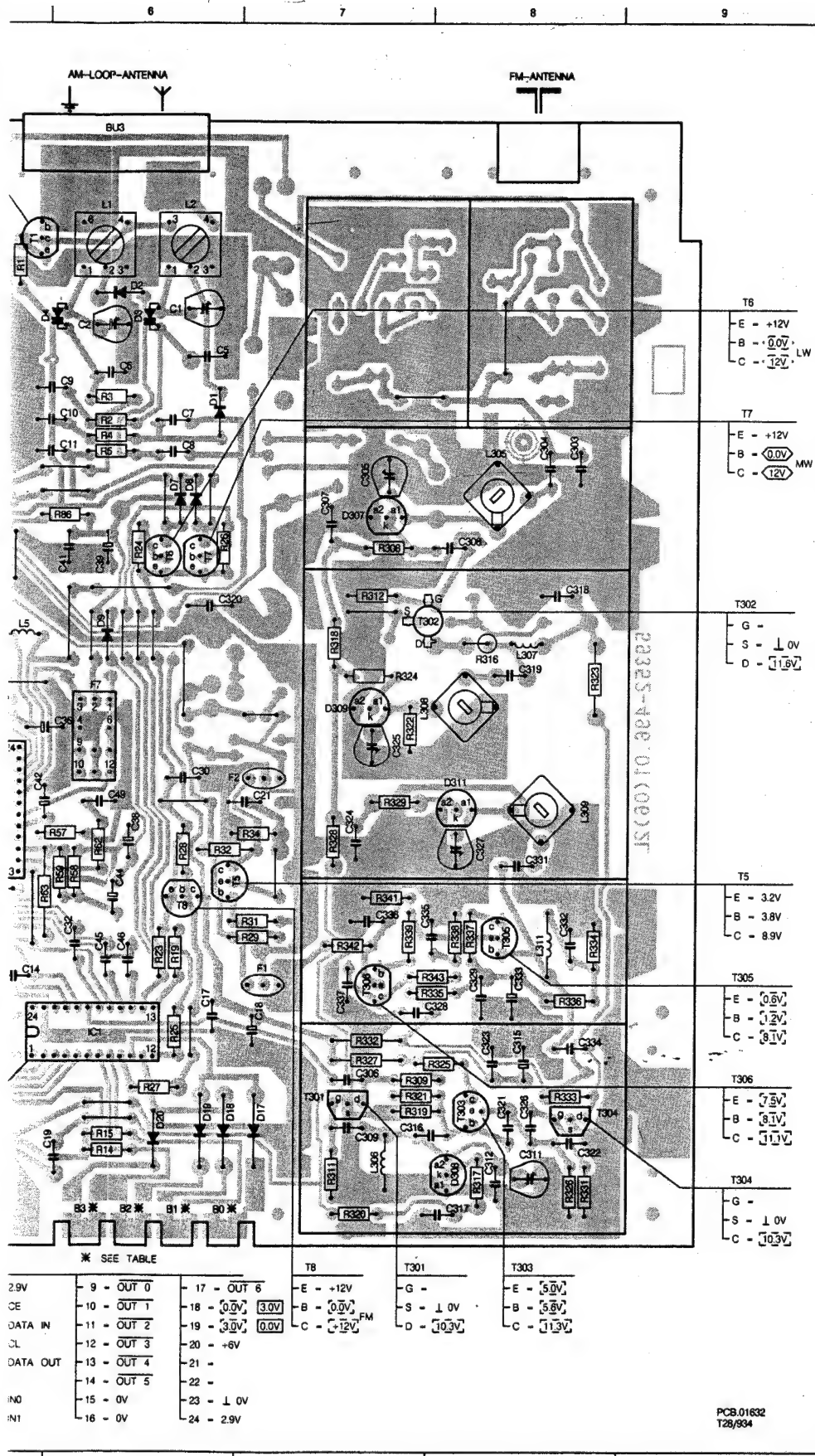
AM FM MW LW

- T11
- B - 4.3V
 - C - 3.7V 3.4V
 - E -
- T12
- B - 4.3V
 - C - 3.7V 3.4V
 - E -

- IC3
- 1 - 1.0V 2.4V
 - 2 - 1.0V 2.4V
 - 3 - 1.0V 2.4V
 - 4 - 1.0V
 - 5 - 12V
 - 6 - 12V
 - 7 - +12V
 - 8 - 0V
 - 9 - 3.7V 3.9V
 - 10 - 2.5V
 - 11 - 2.5V
 - 12 - 3.2V
 - 13 - IF ENABLE
 - 14 - 1.5V
 - 15 - 1.5V
 - 16 - FIELD STR.
 - 17 - 0V
 - 18 - 1.1V 2.5V
 - 19 - 1.5V
 - 20 - 11.3V 0.0V
 - 21 - 3.7V 3.9V
 - 22 - 3.7V 3.9V
 - 23 - 3.7V 3.4V
 - 24 - 2.3V 2.8V

- IC1
- 1 - 2.9V
 - 2 - CE
 - 3 - DATA IN
 - 4 - CL
 - 5 - DATA OUT
 - 6 -
 - 7 - IN0
 - 8 - IN1
 - 9 - OUT 0
 - 10 - OUT 1
 - 11 - OUT 2
 - 12 - OUT 3
 - 13 - OUT 4
 - 14 - OUT 5
 - 15 - 0V
 - 16 - 0V
 - 17 - OUT 6
 - 18 - 0.0V 3.0V
 - 19 - 3.0V 0.0V
 - 20 - +6V
 - 21 -
 - 22 -
 - 23 - 1.0V
 - 24 - 2.9V

- T8
- E - +12V
 - B - 0.0V FM
 - C - 1.2V
- T301
- G -
 - S - 1.0V
 - D - 10.3V



2A	E 1	F10	B 4	T301	F 7
4A	E 3	F2	D 7	T302	C 8
6A	F 6	F8	D 4	T303	F 8
B0	F 7	F7	D 6	T304	F 8
B1	F 8	F8	D 4	T305	E 8
B2	F 8	F9	B 5	T306	E 7
B3	F 6	IC1	E 6	T5	E 6
BU3	A 6	IC2	D 2	T6	C 6
C1	B 8	IC3	D 5	T7	E 6
C10	B 6	IC4	E 2	T8	C 6
C102	C 1	L1	A 6		
C103	A 4	L2	A 6		
C11	C 6	L3	C 5		
C12	E 5	L305	C 8		
C13	E 5	L306	F 7		
C14	E 5	L307	D 8		
C15	F 4	L308	D 7		
C16	F 4	L309	D 8		
C17	E 6	L311	E 8		
C18	E 7	L4	C 5		
C19	F 6	L5	C 5		
C2	B 6	Q1	E 5		
C21	D 7	Q2	D 2		
C22	C 4	R1	B 5		
C23	C 5	R11	E 5		
C24	C 4	R12	F 4		
C25	C 5	R13	F 5		
C26	C 5	R14	F 6		
C30	D 6	R15	F 6		
C303	C 8	R16	F 4		
C304	C 8	R17	F 5		
C305	C 7	R18	F 5		
C306	F 7	R19	E 6		
C307	C 7	R2	B 6		
C308	C 8	R21	C 4		
C309	F 7	R22	C 5		
C311	F 8	R23	E 6		
C312	F 8	R24	C 6		
C315	F 8	R25	E 6		
C316	F 7	R26	C 6		
C317	F 8	R27	F 6		
C318	C 8	R28	E 6		
C319	D 8	R29	E 7		
C32	E 6	R3	B 6		
C320	C 6	R308	C 7		
C321	F 8	R309	F 7		
C322	F 8	R31	E 7		
C323	F 8	R311	F 7		
C324	D 7	R312	C 7		
C325	D 7	R316	D 8		
C326	F 8	R317	F 8		
C327	E 8	R318	C 7		
C328	E 8	R319	F 7		
C329	E 8	R32	E 6		
C33	D 4	R320	F 7		
C331	E 8	R321	F 7		
C332	E 8	R322	D 7		
C333	E 8	R323	D 8		
C334	F 9	R324	D 7		
C335	E 7	R325	F 8		
C336	E 7	R326	F 8		
C337	E 7	R327	F 7		
C34	D 5	R328	D 7		
C35	D 5	R329	D 7		
C36	D 6	R331	F 8		
C37	4	R332	F 7		
C38	D 6	R333	F 8		
C39	C 6	R334	E 8		
C41	C 8	R335	E 8		
C42	D 5	R336	E 8		
C43	D 5	R337	E 8		
C44	E 6	R338	E 8		
C45	E 6	R339	E 7		
C46	E 6	R34	D 7		
C47	E 5	R341	E 7		
C48	4	R342	E 7		
C49	D 6	R343	E 8		
C5	B 6	R4	B 6		
C50	E 4	R41	C 5		
C51	E 4	R42	E 5		
C52	D 3	R43	C 5		
C53	D 3	R5	C 6		
C54	E 3	R54	D 5		
C55	D 4	R56	D 5		
C56	C 3	R57	D 6		
C57	E 3	R58	E 8		
C58	D 3	R59	E 6		
C59	D 3	R6	F 5		
C6	B 6	R61	E 4		
C62	C 3	R62	E 6		
C63	D 2	R63	E 5		
C66	C 2	R64	D 4		
C67	D 2	R65	D 4		
C68	C 1	R66	E 4		
C69	C 3	R68	E 2		
C7	B 6	R69	D 3		
C71	C 3	R7	E 5		
C8	C 6	R70	E 4		
C9	B 6	R71	C 3		
C94	E 1	R73	C 2		
C98	E 1	R74	E 2		
D17	B 6	R75	C 3		
D18	F 7	R76	D 1		
D19	F 6	R78	C 2		
D2	B 6	R8	E 5		
D20	F 6	R80	C 1		
D3	B 6	R81	E 2		
D305	B 8	R86	C 6		
D307	C 7	R87	D 1		
D308	F 8	R9	E 5		
D309	D 7	R94	A 5		
D311	D 8	R95	A 4		
D4	B 5	R97	B 4		
D5	D 4	R98	B 4		
D6	C 5	T1	A 5		
D7	C 6	T11	D 4		
D8	C 6	T12	D 5		
D9	C 6	T2	F 4		
F1	E 7	T3	F 5		

LAMP PANEL

OPERATING PANEL 1

to RF+IF
panel 2

OSCILLATOR

4A

UP

IR sensor

RC-5
BUFFER

2G
to plug panel

DP401
LC-DISPLAY
59720-015.00

LA402
5V/115MA

4B

LAMP1

LAMP2

POWER DOWN

LED

LSR

IC401
M 34200M4-162SP
8305-203-035
MOS

+5V

+5V

+5V

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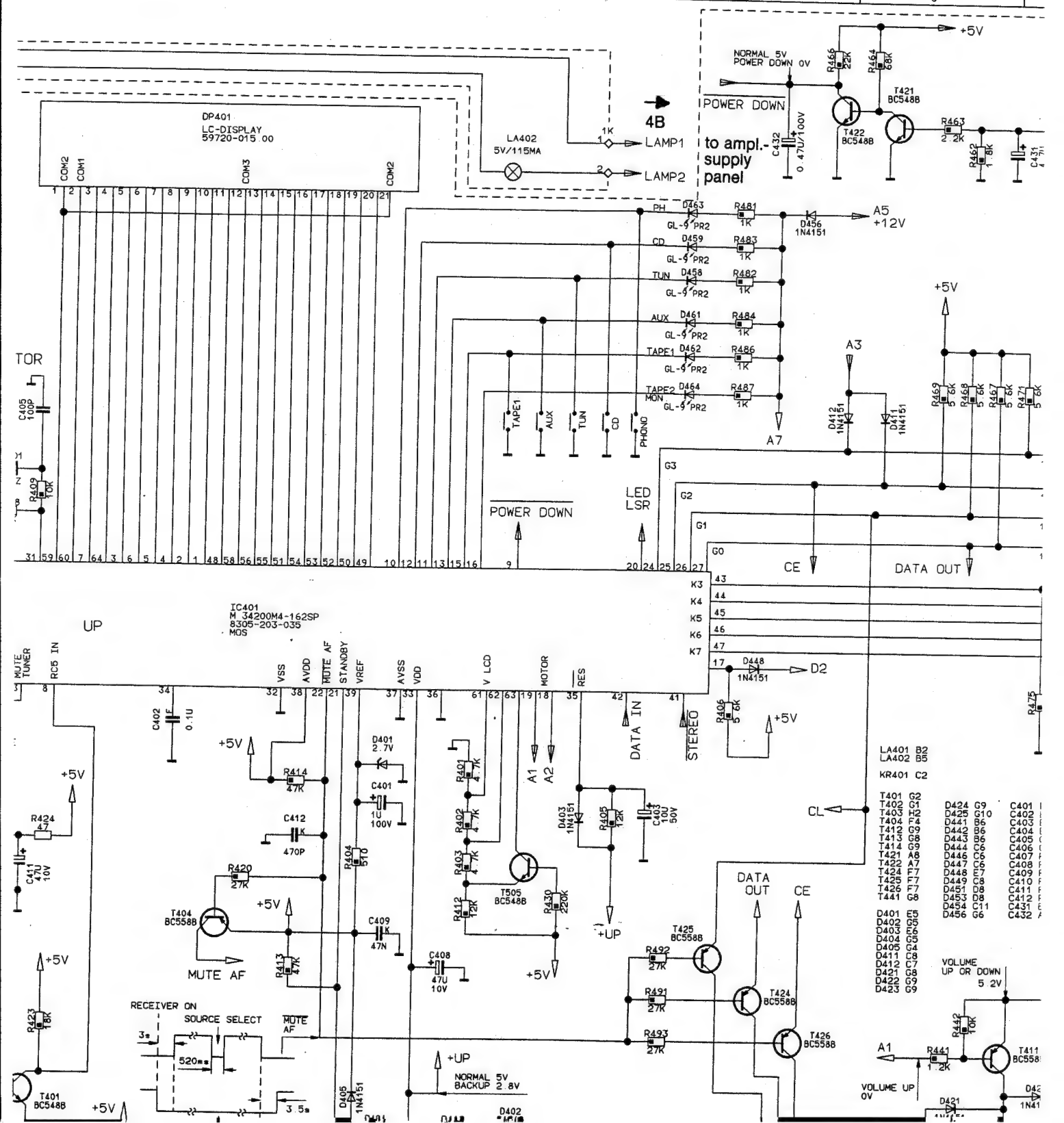
+5V

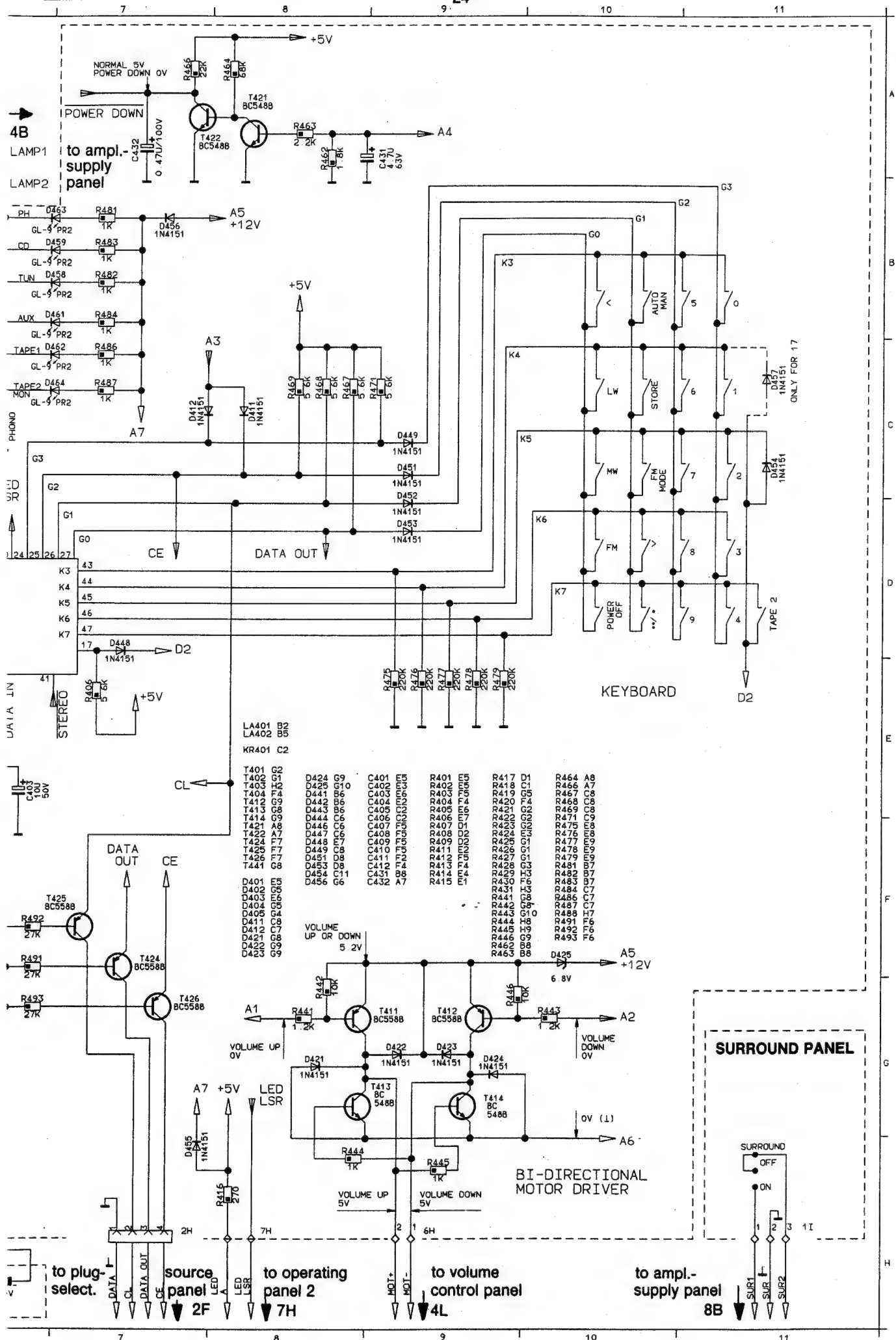
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7B

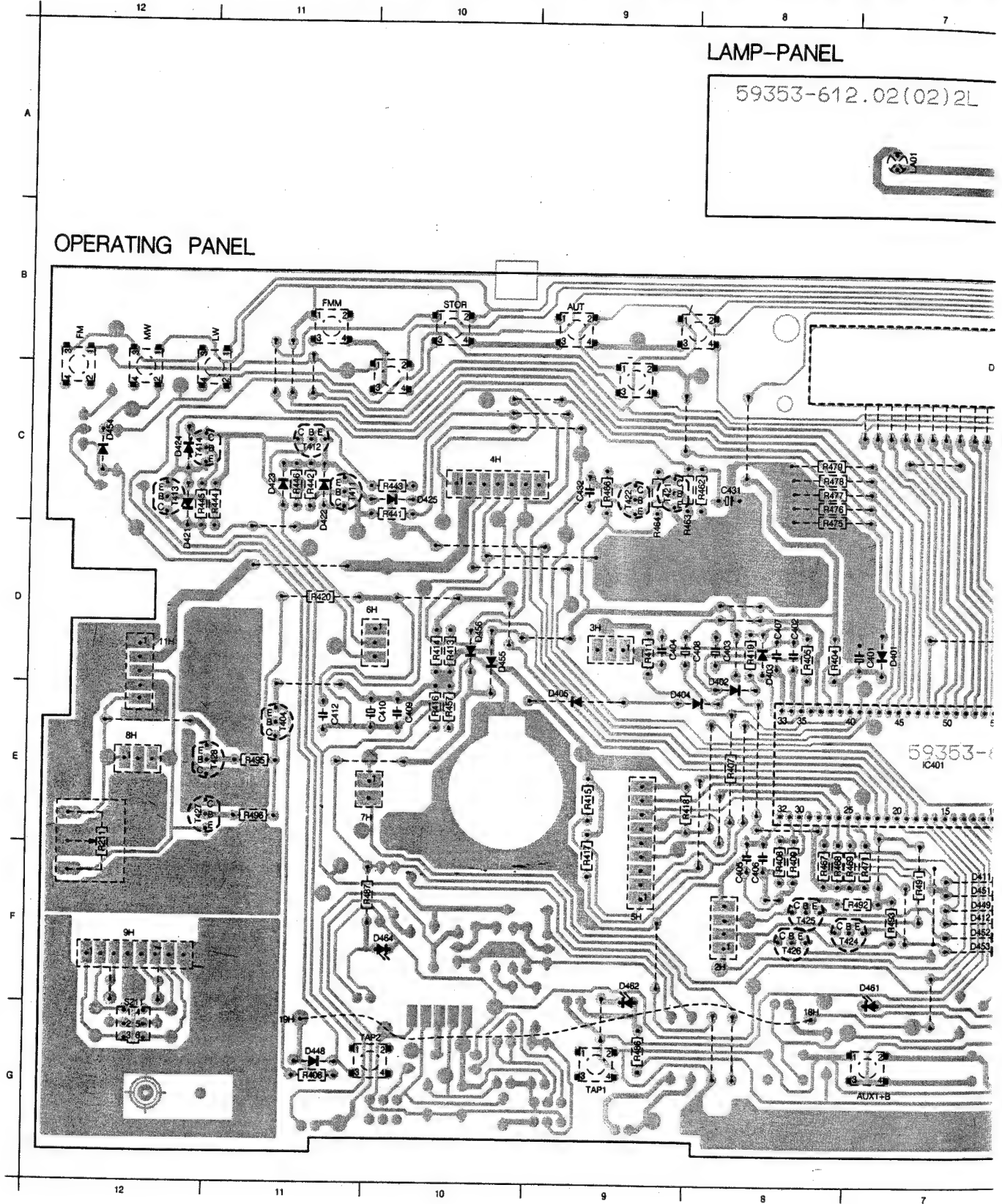
to ampl.-
supply panel

to SE





+	B11	05	B5	13H	B2	5H	F9	C222	F1	C231	F2	C241	D3	C404	D9	C412	E11	D405	D6	D425	C10	D455	D10	D464	F11	MW	B12	R2
-	B9	06	C2	15H	E1	6H	D11	C223	D2	C232	F2	C242	D4	C405	F8	C431	C8	D405	E9	D445	F8	D456	D10	DP401	B7	POWER	F1	R2
/	B9	07	C3	1H	C3	7H	E11	C224	F2	C233	F4	C243	E2	C406	F8	C432	C9	D411	F7	D448	G11	D458	F4	FM	B12	R211	E12	R2
00	C5	08	C4	1I	G3	8H	E12	C225	D2	C234	F4	C244	E2	C407	D8	CD-8	G6	D412	F7	D449	F7	D459	F6	IC401	E7	R222	E1	R2
01	B2	09	C4	1K	A5	9H	F12	C226	F2	C235	F4	C246	E4	C408	D8	D401	D7	D421	D12	D451	F7	D461	F7	LA01	A7	R223	E1	R2
02	B3	10H	D4	2H	F8	AUT	B9	C227	E3	C236	E3	C401	D7	C409	E10	D402	D8	D422	C11	D452	F7	D462	F9	LA02	A6	R224	E1	R2
03	B4	11H	D12	3H	D9	AUX1+	G7	C228	E3	C237	E4	C402	D8	C410	E10	D403	D8	D423	C11	D453	F7	D463	F3	LW	B11	R225	E2	R2
04	B4	12H	B1	4H	C10	C221	E1	C229	E3	C238	E3	C403	D8	C411	C2	D404	E9	D424	C12	D454	C12	D463	F3					

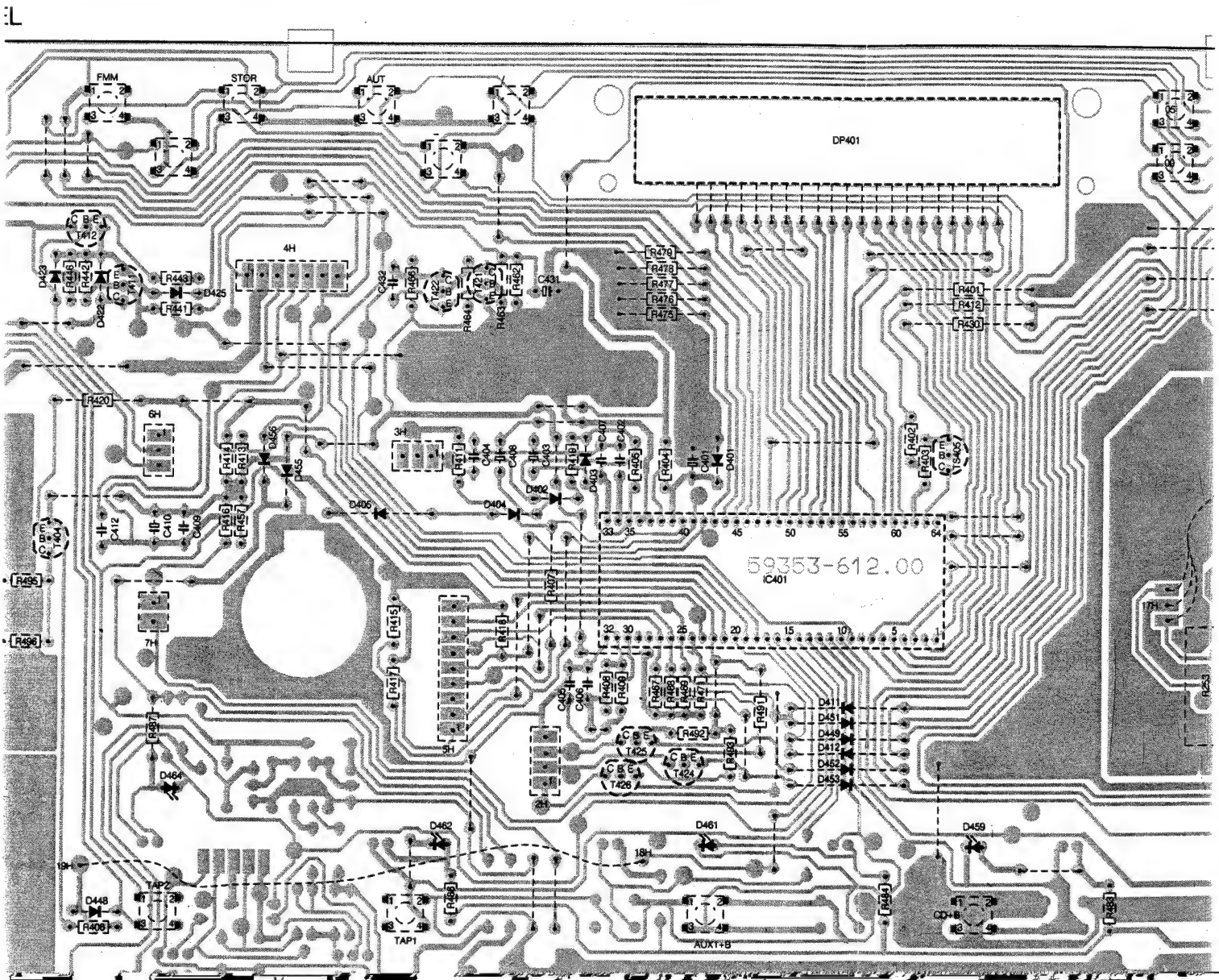


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6H	D11	C223	D2	C232	E4	C242	D4	C405	F8	C431	C3	D405	E9	D445	F9	D458	D10	DP401	B7	POWER	F1	R227	E2	R236	E3	R245	E4	R255	E2	R407	E8	R416	
7H	E11	C224	F2	C233	F4	C243	E2	C406	F8	C432	C3	D411	F7	D446	G11	D459	F4	FM	B12	R211	E12	R228	E2	R237	F2	R247	E3	R256	E2	R408	F8	R417	
8H	E12	C225	D2	C234	E4	C244	E2	C407	D8	CD+B	G6	D412	F7	D449	F7	D458	C12	FM	B11	R221	E1	R229	D2	R238	E4	R248	D3	R401	C6	R409	F8	R418	
9H	F12	C226	F2	C235	F4	C246	E4	C408	D8	D401	D7	D421	D12	D451	F7	D459	F6	IC401	E7	R222	E1	R231	F2	R239	F4	R249	E3	R402	D6	R411	D9	R419	
AUT	B9	C227	E3	C236	E3	C401	D7	C409	E10	D402	D8	D422	C11	D452	F7	D461	F7	LA01	A7	R223	E1	R232	D2	R241	E4	R251	E4	R403	D6	R412	C8	R420	
AUX1+ G7	C228	E3	C237	E4	C402	D8	C410	E10	D403	D8	D423	C11	D453	F7	D462	F9	LA02	A6	R224	E1	R233	E2	R242	F4	R252	E3	R404	D8	R413	D10	R421		
0	C221	E1	C229	E3	C238	E3	C403	D8	C411	C2	D404	E9	D424	C12	D454	C12	D463	F3	LW	B11	R225	E2	R234	E2	R243	E4	R253	F4	R405	D8	R414	D10	R422

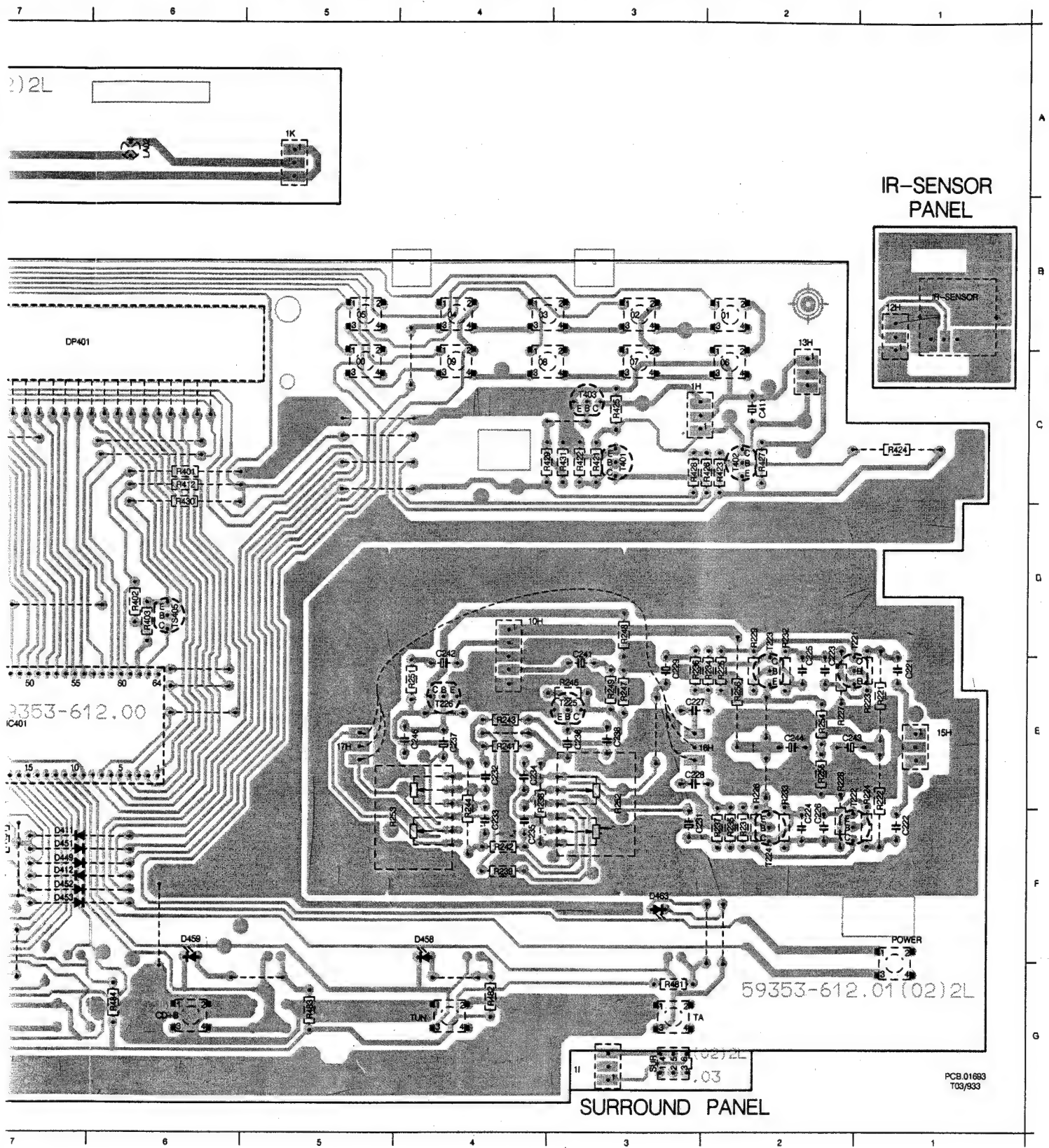
11 10 9 8 7 6 5

LAMP-PANEL

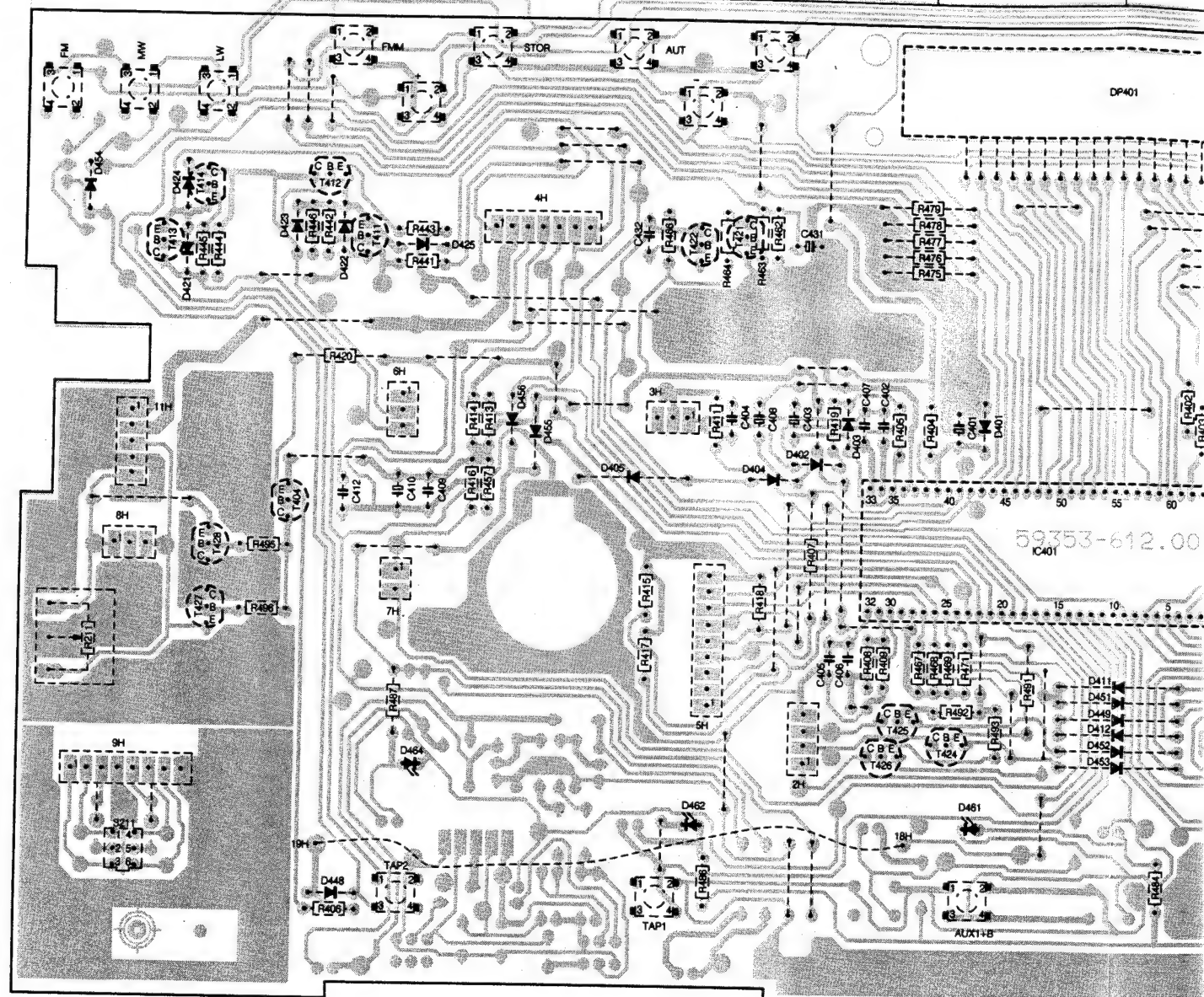
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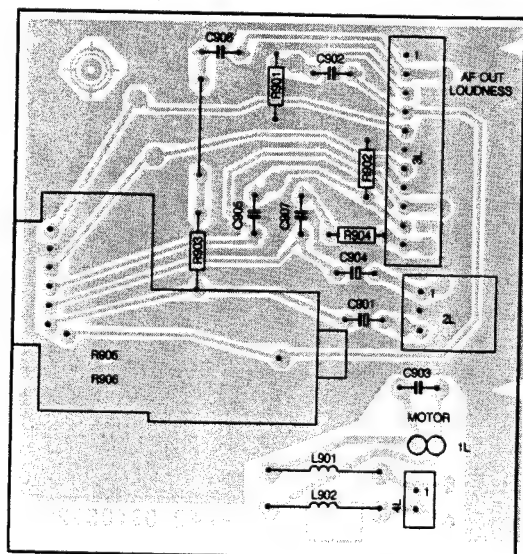
1	B12	R226 E2	R235 F2	R244 E4	R254 E2	R406 G11	R415 E9	R423 C2	R431 C3	R462 C8	R475 C8	R484 G6	3211 G12	T226 E4	T414 C12	TA G3
WER F1	R227 E2	R236 E3	R245 E4	R255 E2	R407 E8	R416 E10	R424 C1	R431 C3	R441 C11	R463 C8	R476 C8	R486 G9	STOR B10	T401 C3	T421 C9	TAP1 G8
11 E12	R228 E2	R237 F2	R247 E3	R256 E2	R408 F8	R417 F9	R425 C3	R442 C11	R464 C9	R477 C8	R487 F10	R491 F7	T221 D1	T402 C2	T422 C9	TAP2 G11
21 E1	R229 D2	R238 E4	R248 D3	R401 C6	R409 F8	R418 E8	R426 C2	R443 C11	R466 C9	R478 C8	R492 F8	R493 F7	T222 D2	T403 C3	T423 F8	TUN G4
22 E1	R231 F2	R239 F4	R249 E3	R402 C6	R411 D9	R419 D8	R427 C2	R444 C11	R467 F8	R479 C8	R493 F7	R495 E11	T223 D2	T404 E11	T424 F8	
23 E1	R232 D3	R241 E4	R251 E4	R403 D6	R412 C6	R420 D11	R428 C3	R445 C12	R468 F8	R481 G3	R493 F7	R495 E11	T224 F2	T411 C11	T425 F8	
24 E1	R233 E2	R242 F4	R252 E3	R404 D8	R413 D10	R421 C3	R429 C3	R446 C11	R469 F7	R482 G4	R495 E11	R496 E11	T225 E4	T412 C11	T427 E12	
25 E2	R234 E2	R243 E4	R253 F4	R405 D8	R414 D10	R422 C3	R430 C6	R457 E10	R471 F7	R483 G5	R496 E11			T413 C12	T428 E11	



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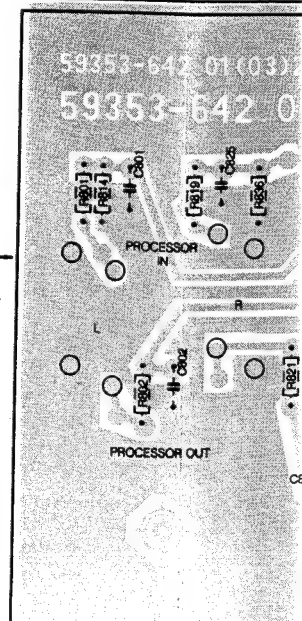
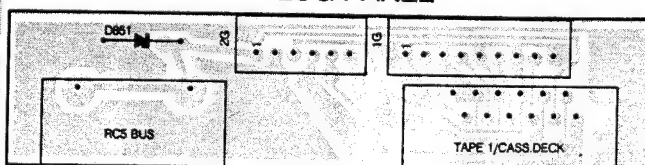
[illegible]

OPERATING PANEL (TONE CONTROL)

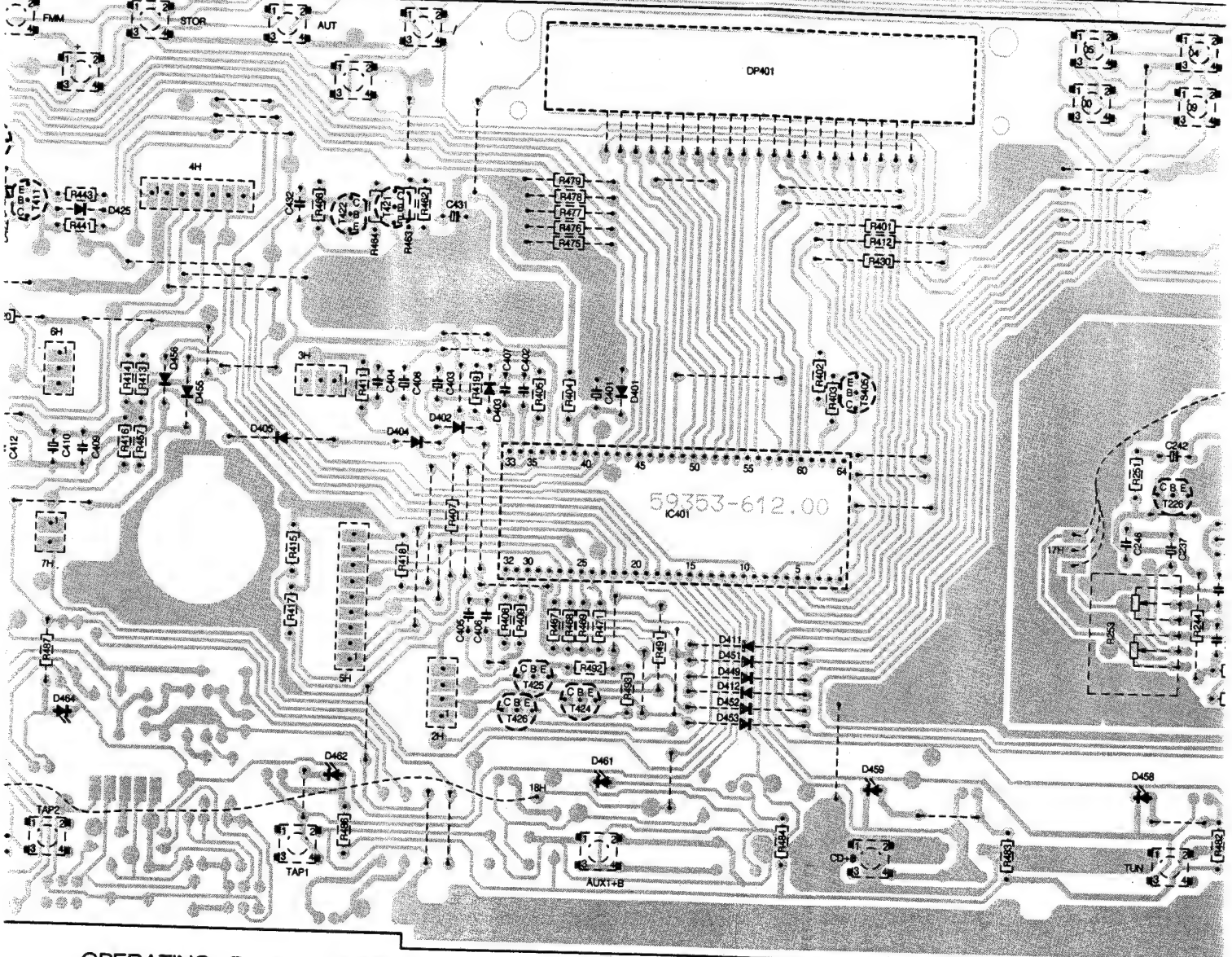


-VOLUME CONTROL PANEL

PLUG-SOURCE SELECTOR PANEL —



D2	C238	C3	C406	D8	C803	F2	C815	F1	C827	G1	C902	F11	D405	C9	D449	D7	D462	E9	L902	H11	R227	C2	R239	D4	R253	D4	R408	D8	R420	B11	R431	B3	R41
C3	C241	C3	C407	B8	C804	F1	C816	F1	C828	G1	C903	H11	D405	C8	D451	D7	D463	D3	LW	A11	R228	C2	R241	C4	R254	C2	R409	D8	R421	B3	R441	B10	R41
C3	C242	C4	C408	C8	C805	G4	C817	H1	C829	G1	C904	G11	D411	D7	D452	D7	D464	D10	MW	A12	R229	C2	R242	D4	R255	D2	R411	C9	R422	B3	R442	B11	R41
C3	C243	C2	C409	C10	C806	G2	C818	H1	C831	H6	C905	G12	D412	D7	D453	D7	D465	H10	POWER	E1	R231	C2	R243	C4	R256	C2	R412	B6	R423	B2	R443	B11	R41
D4	C244	C2	C410	C10	C807	G4	C819	F5	C832	G1	C906	F12	D421	B11	D454	A12	DP401	A7	R211	D12	R232	C2	R244	C4	R401	B6	R413	C10	R424	B1	R444	B11	R41
D4	C246	C4	C411	A2	C808	H2	C821	G1	C833	H5	C907	G11	D422	B11	D455	C9	FM	A12	R221	C1	R233	C2	R245	C3	R402	B6	R414	C10	R425	A3	R445	B11	R41
D4	C401	C7	C412	C10	C809	H2	C822	G6	C834	F1	C908	E6	D423	B11	D456	B10	FMM	A11	R222	D1	R234	C2	R246	C3	R403	C8	R415	C9	R426	B2	R446	B11	R41
D4	C402	B8	C413	B8	C810	H2	C823	G1	C835	H1	C909	E6	D424	A11	D457	A12	IC401	C7	R223	D1	R235	C2	R247	C3	R404	C7	R416	C10	R427	B2	R447	C10	R41
C4	C403	C8	C414	B9	C811	G3	C824	F1	C836	G5	C910	F11	D425	B10	D458	E4	IC801	G1	R224	D1	R236	C2	R248	C3	R405	C9	R417	D9	R428	B3	R448	B8	R41
C4	C404	C8	C801	E9	C812	G3	C824	F1	C836	G5	D402	C8	D425	B10	D458	E4	C902	G6	R225	C2	R237	D2	R251	C4	R406	E11	R418	D6	R429	B3	R449	B8	R41
C4	C405	D8	C802	G6	C814	F2	C826	H1	C901	G11	D404	C8	D448	E11	D461	E7	L901	H11	R226	D2	R238	D3	R252	D3	R407	C8	R419	C8	R430	B6	R450	B8	R41
			10				9				8						7					6					5						

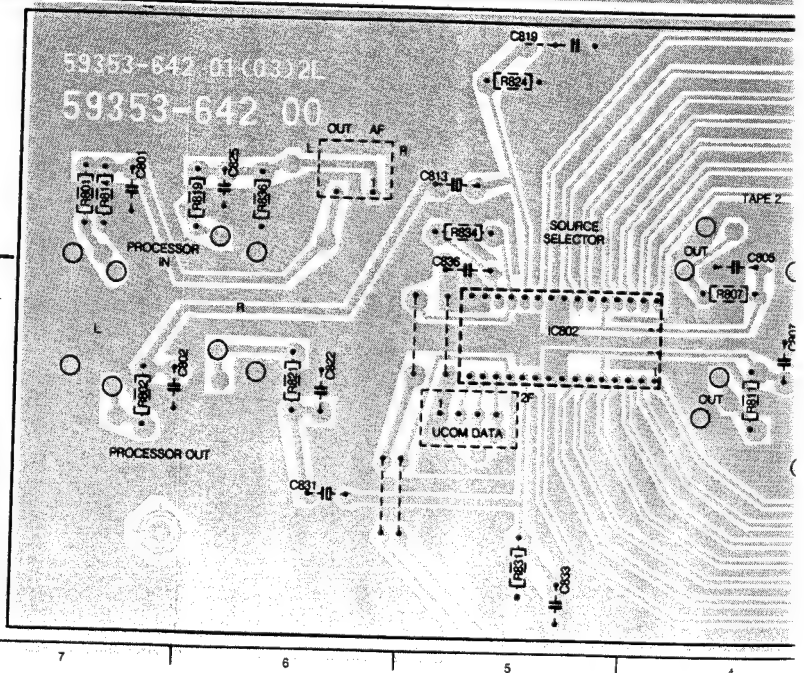
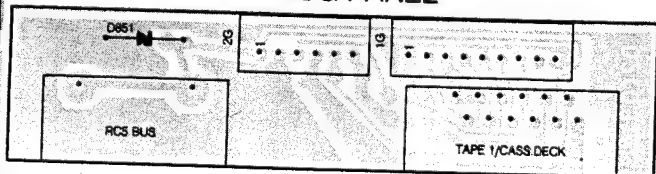


OPERATING PANEL (TONE CONTROL)

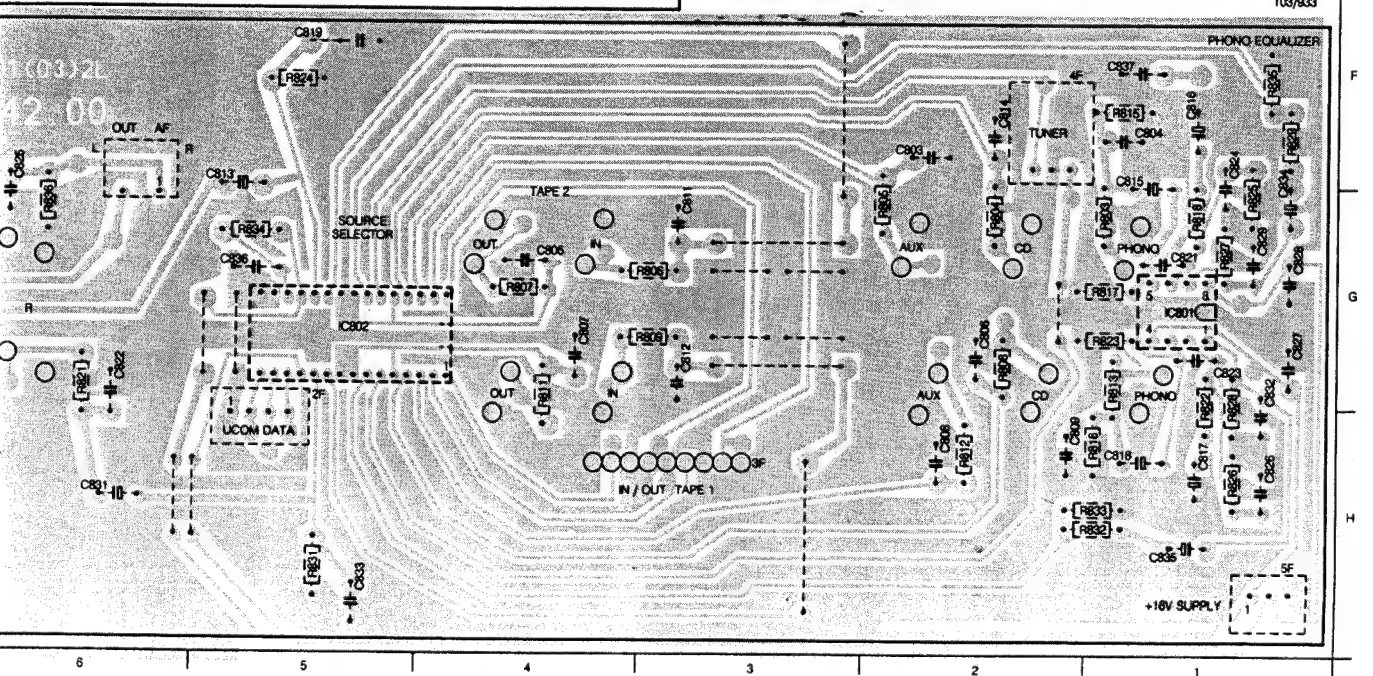
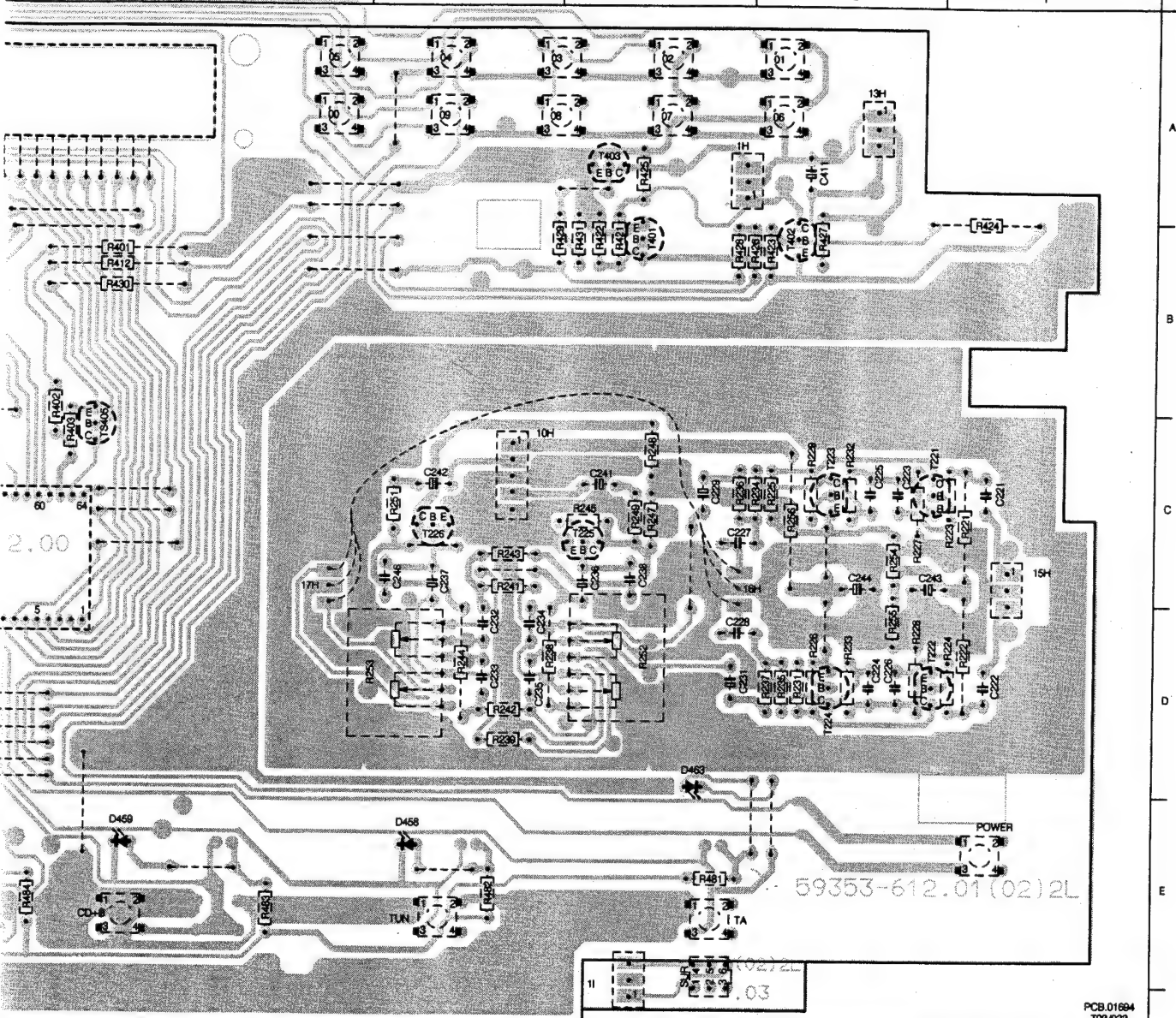
VOLUME CONTROL PANEL

PLUG-SOURCE SELECTOR PANEL

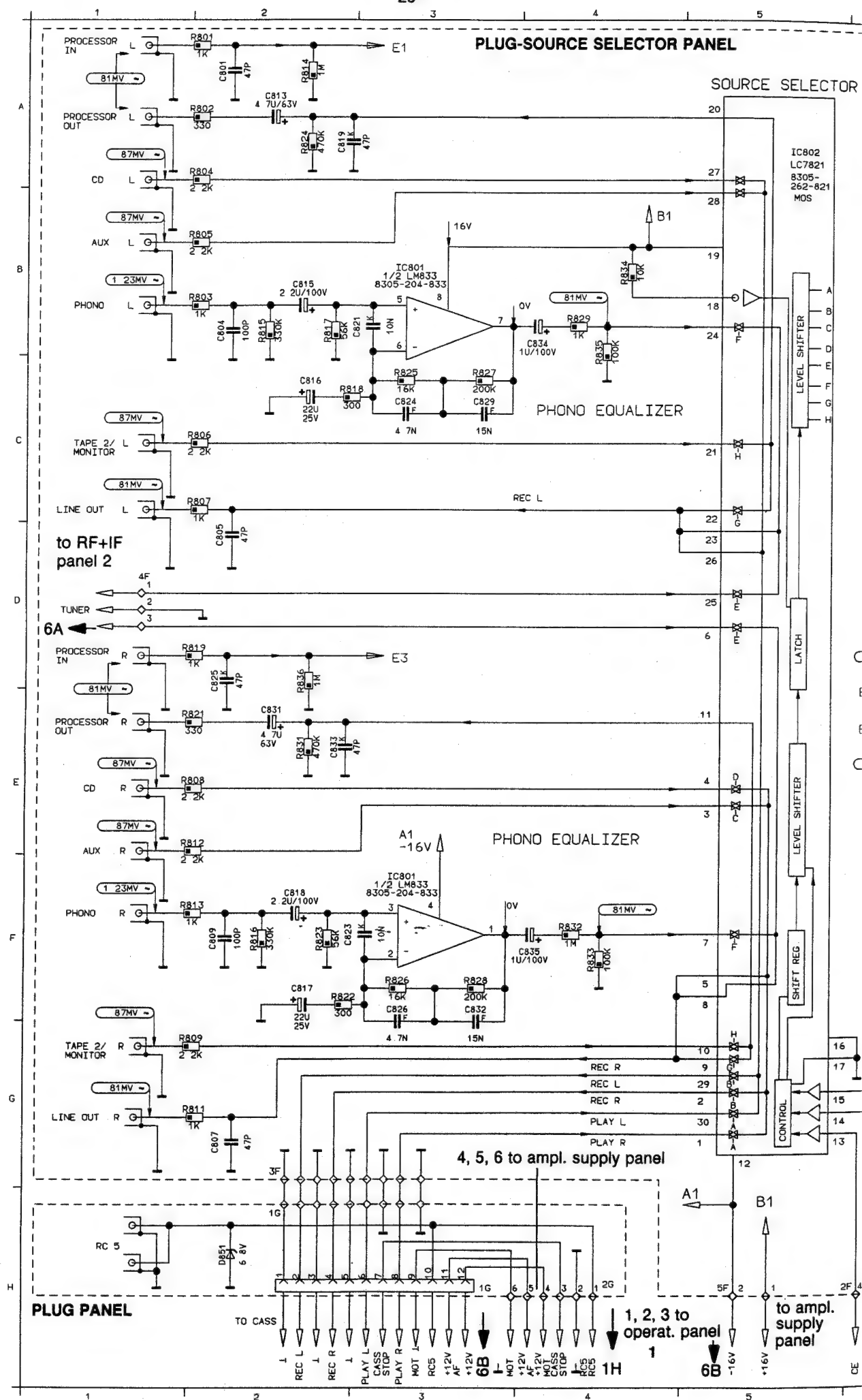
PLUG PANEL



227 C2	R239 D4	R253 D4	R408 D8	R420 B11	R431 B3	R466 B9	R482 E4	R802 G7	R814 G7	R826 H1	R902 G11	T224 D2	T421 B8
228 C2	R241 C4	R254 C2	R409 C8	R421 B3	R441 B10	R467 D7	R483 E5	R803 G1	R815 F1	R827 G1	R903 G12	T225 C4	T422 B9
229 C2	R242 D4	R255 D2	R411 C9	R422 B3	R442 B11	R468 D7	R484 E6	R804 G2	R816 H1	R828 G1	R904 G11	T226 C4	T424 D8
231 C2	R243 C4	R256 C2	R412 B6	R423 B2	R443 B10	R469 D7	R485 E9	R805 G2	R817 G2	R829 F1	R905 H12	T401 B3	T425 D8
232 C2	R244 C4	R401 B6	R413 C10	R424 B1	R444 B11	R471 D7	R486 E9	R806 G4	R818 G1	R831 H5	R906 H12	T402 B2	T426 D8
233 C2	R245 C3	R402 B6	R414 C10	R425 A3	R445 B11	R475 B8	R487 D10	R807 G4	R819 G6	R832 H2	S211 E12	T403 A3	T427 D11
234 C2	R247 C3	R403 C8	R415 C9	R426 B2	R446 B11	R476 B8	R491 D7	R808 G2	R821 G6	R833 H2	STOR A10	T404 C11	T428 C11
235 C2	R248 C3	R404 C7	R416 C10	R427 B2	R447 C10	R477 B8	R492 D7	R809 G4	R822 G1	R834 G6	SUR E3	T411 B10	T429 E3
236 C3	R249 C4	R405 C8	R417 D9	R428 B3	R448 B8	R478 B8	R493 D7	R811 G4	R823 G2	R835 F1	TA A10	T412 A11	TAP1 E9
237 D2	R251 C4	R406 E11	R418 D8	R429 B3	R449 B8	R479 B8	R494 D11	R812 H2	R824 F5	R836 G6	T222 D2	T413 B11	TAP2 E10
238 D3	R252 D3	R407 C8	R419 C8	R430 B6	R464 B9	R481 E3	R801 G7	R813 G1	R825 G1	R901 F11	T223 C2	T414 A11	TUN E4
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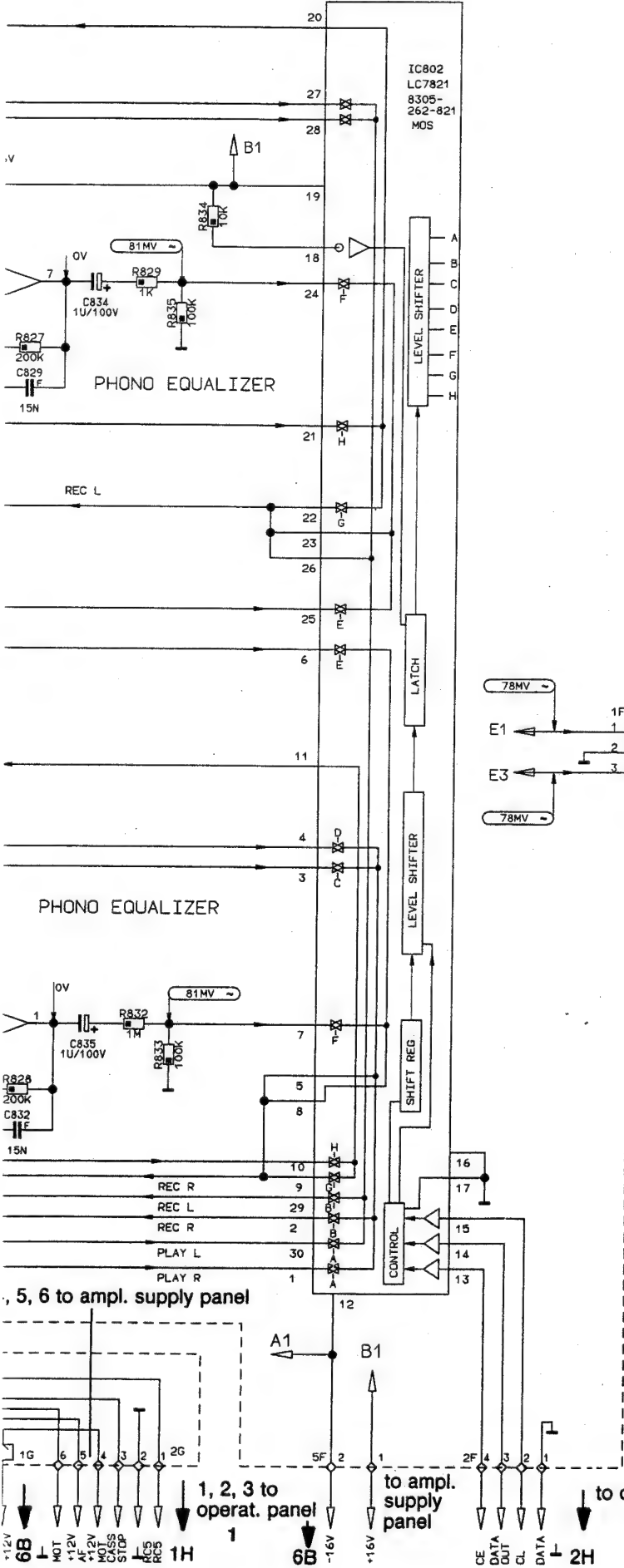


PLUG-SOURCE SELECTOR PANEL

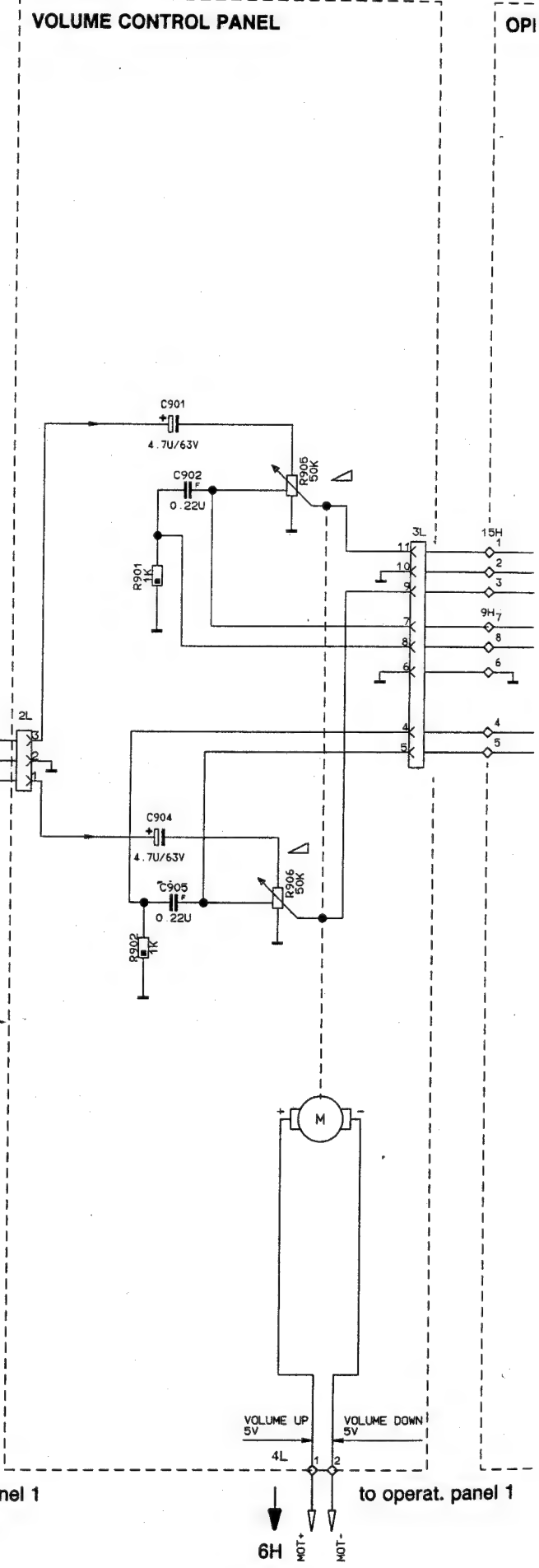


PLUG-SOURCE SELECTOR PANEL

SOURCE SELECTOR

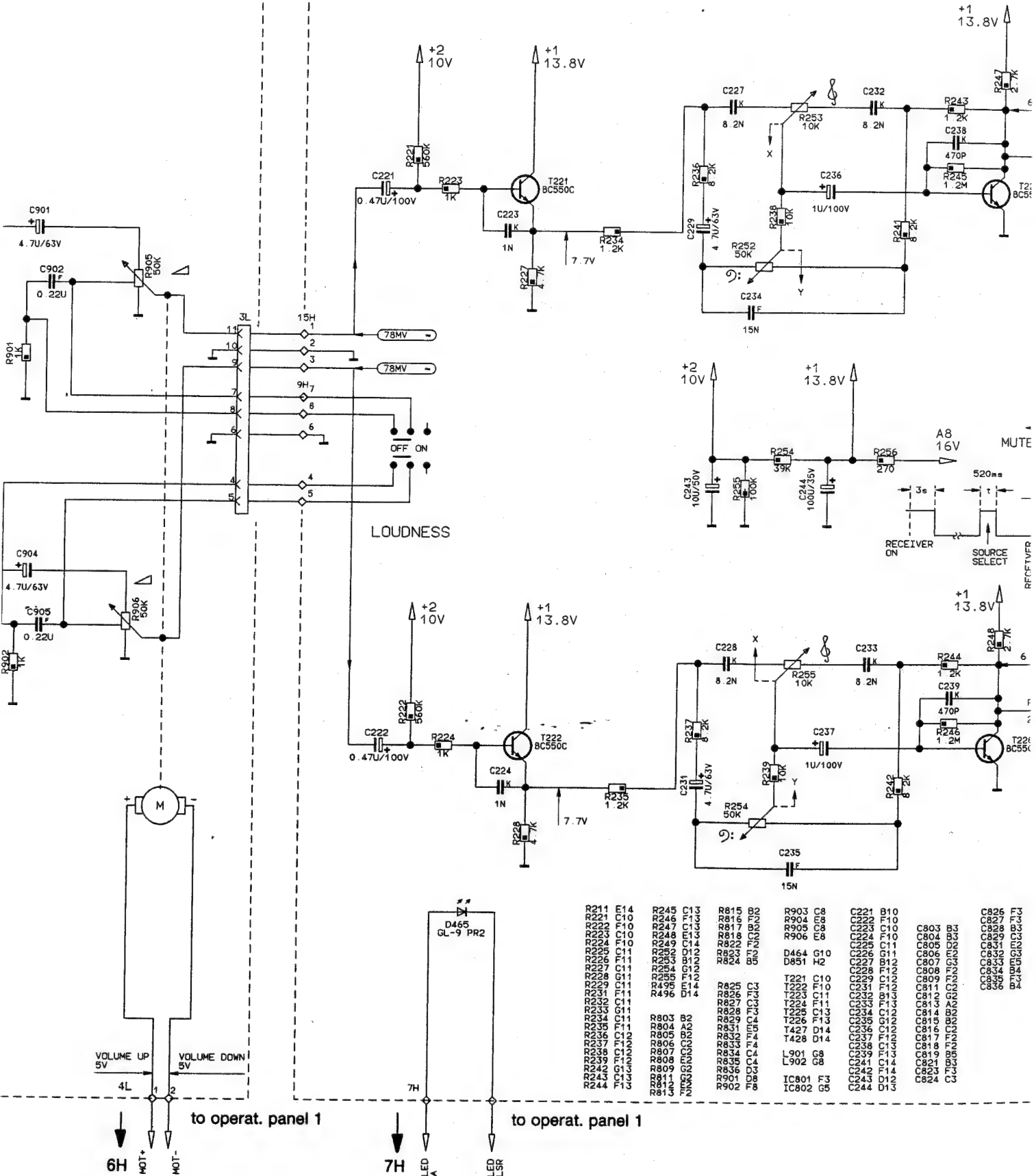


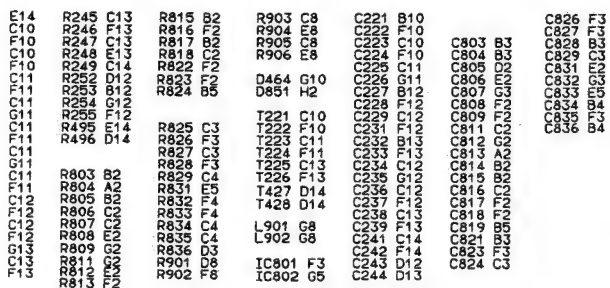
VOLUME CONTROL PANEL



CONTROL PANEL

OPERATING PANEL 2







AMPLIFIER-SUPPLY PANEL

HEADPHONE PANEL

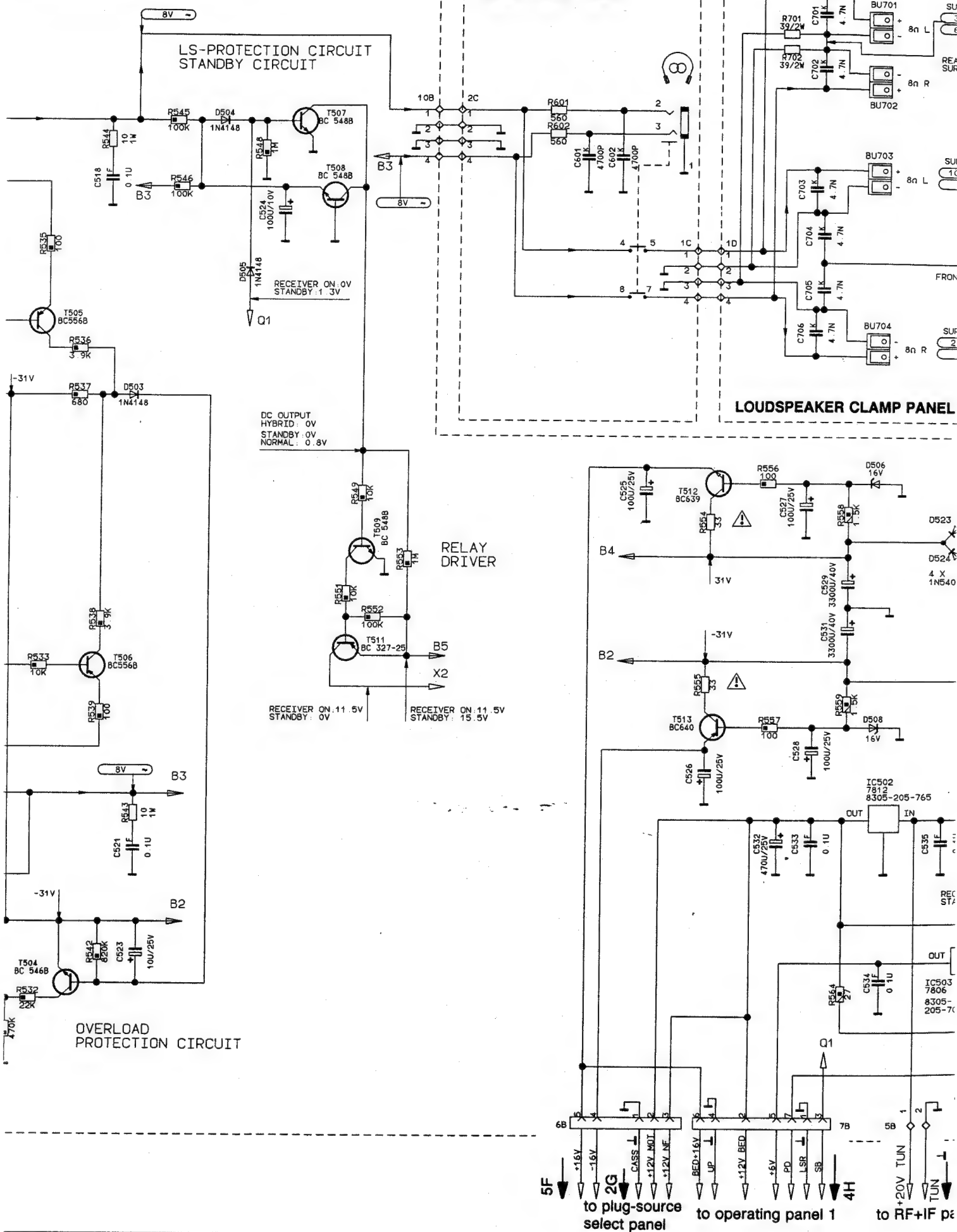
LOUDSPEAKER CLAMP PANEL

LS-PROTECTION CIRCUIT STANDBY CIRCUIT

DC OUTPUT
HYBRID: 0V
STANDBY: 0V
NORMAL: 0.8V

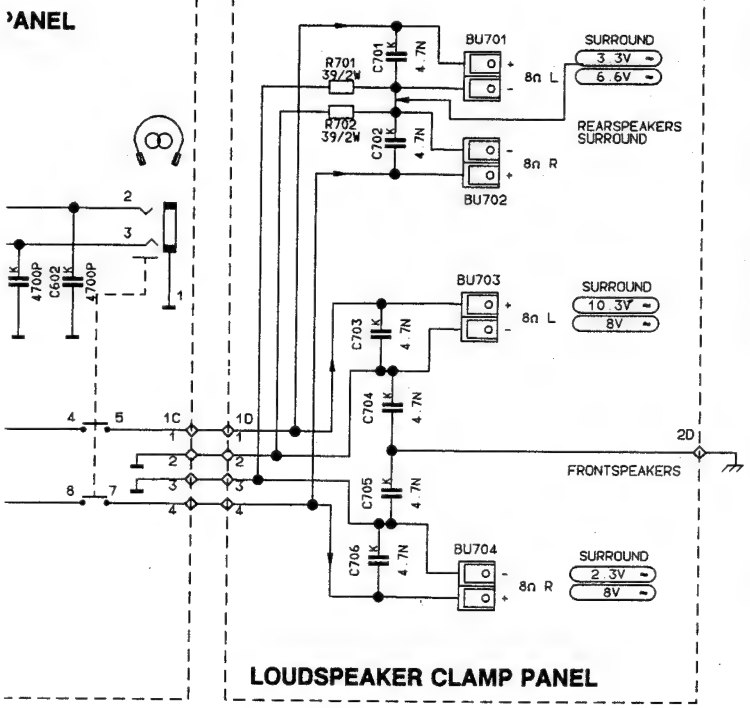
RELAY DRIVER

OVERLOAD PROTECTION CIRCUIT



5F → -16V → 2G → CASS → +12V M01 → +12V M02 → BED+16V → UP → +12V BED → +6V → PD → LSR → SB → 4H → +20V TUN → TUN → to plug-source select panel to operating panel 1 to RF+IF p...

PANEL

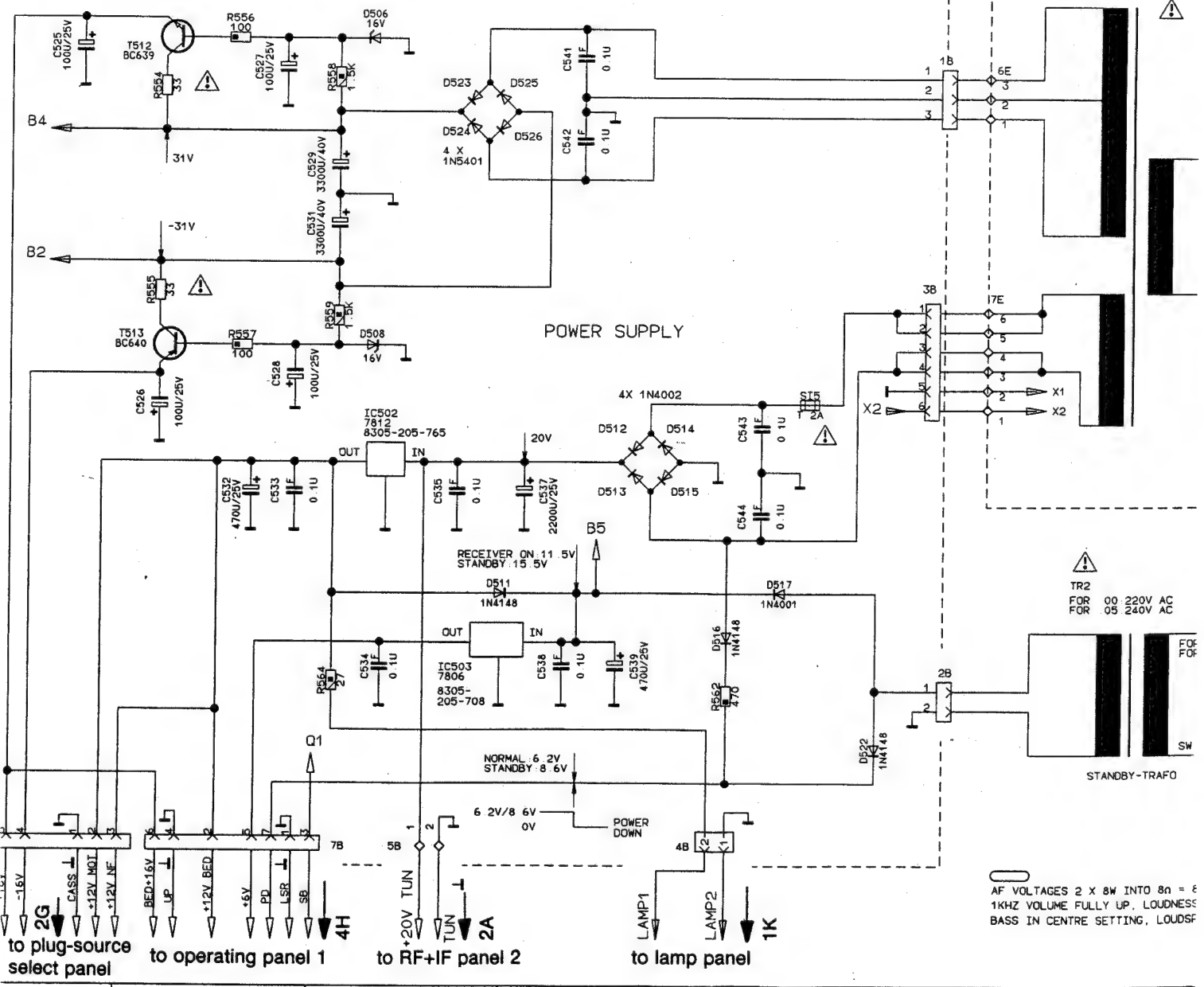


REL651 D15	D501 H4	C501 A1	C527 D9	R501 F1	R528 H3	R556 D9
SI1 E16	D502 G4	C502 F1	C528 F9	R502 B1	R529 C4	R557 F9
SI2 E14	D503 C5	C503 G1	C529 E9	R503 A1	R531 H4	R558 D10
SI3 E14	D504 A5	C504 A2	C531 F9	R504 C2	R532 G4	R559 E10
SI4 E14	D505 B6	C505 B2	C532 G9	R505 F1	R533 E4	R561 G10
	D506 D9	C506 B2	C533 H10	R506 F1	R534 B4	R562 H11
L501 G1	D507 D10	C507 E2	C534 H10	R507 G2	R535 C4	R563 H12
L502 F5	D509 F10	C508 F2	C535 G10	R508 C2	R536 C4	R601 B8
	D511 G11	C509 G2	C536 H10	R509 G2	R537 C4	R602 B8
IC501 F3	D512 F11	C510 C4	C537 G11	R511 A3	R538 E5	R701 A9
IC501 A3	D513 F11	C511 A2	C538 H11	R512 E3	R539 F5	R702 A9
IC502 F10	D514 F11	C512 B2	C539 H11	R513 G3	R541 F5	
IC503 G10	D515 F11	C513 G2	C541 E11	R514 H3	R542 G5	
	D516 H11	C514 A3	C542 E11	R515 G3	R543 F5	
	D517 G12	C515 D3	C543 F12	R516 G3	R544 B5	
T501 G1	D518 G12	C516 E4	C544 G12	R517 G3	R545 B5	
T502 G3	D519 G12	C517 G4	C601 B8	R518 H3	R546 B5	
T504 C4	D521 G12	C518 B5	C602 B8	R519 C3	R547 C6	
T505 L4	D522 H12	C519 B5	C651 E16	R521 C3	R548 B6	
T506 E5	D523 E10	C521 F5	C701 A9	R522 C3	R549 D6	
T507 A6	D524 E10	C522 G5	C702 A9	R523 E3	R551 E6	
T508 B6	D525 E10	C523 G5	C703 B9	R524 A4	R552 E6	
T509 D6	D526 E10	C524 B6	C704 C9	R525 B4	R553 E7	
T511 E6	D651 D15	C525 D8	C705 C9	R526 F4	R554 D9	
T512 D9	D652 D16	C526 F9	C706 D9	R527 F4	R555 E9	
T513 E9						

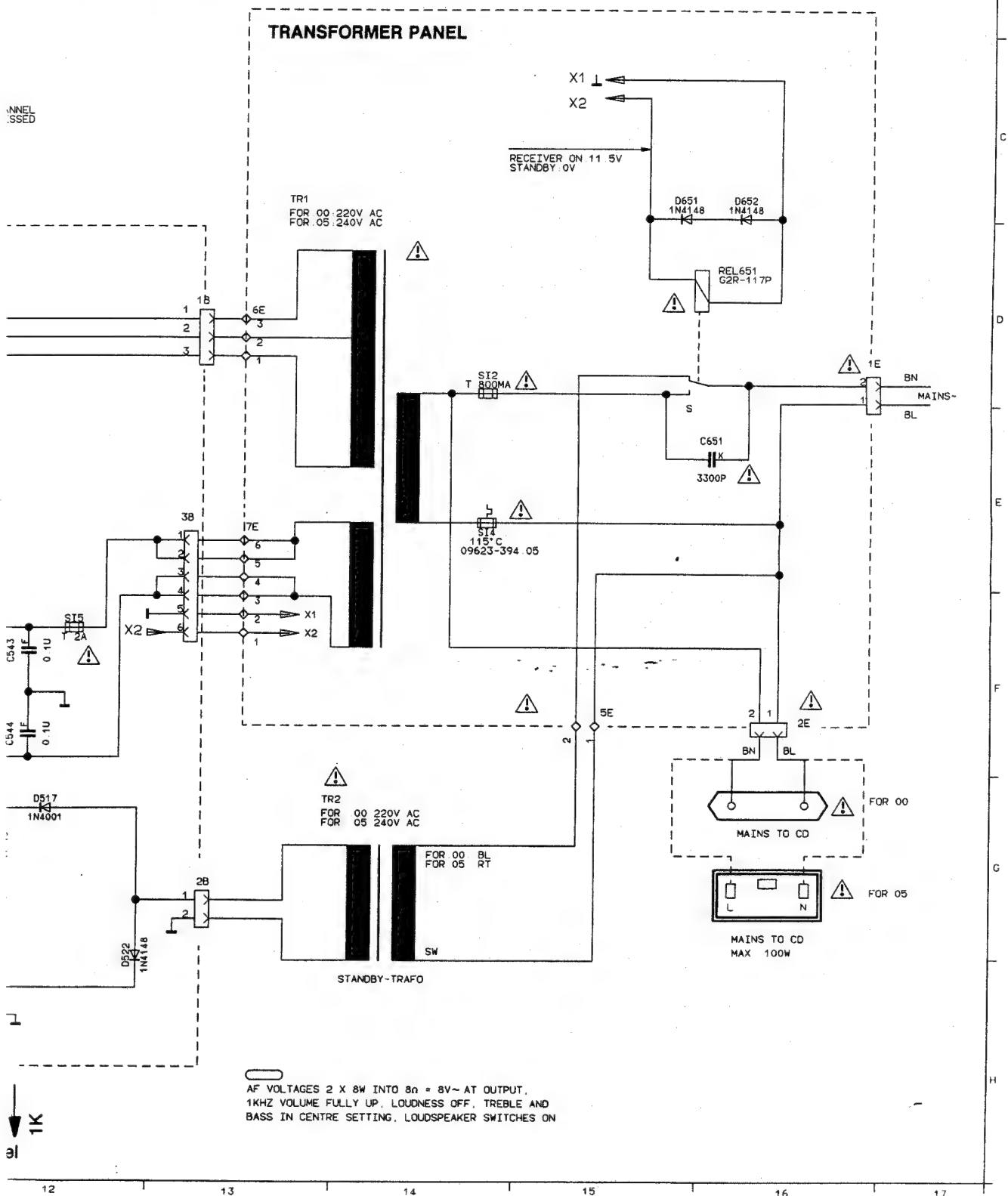
SURROUND:
INPUT ONLY LEFT CHANNEL
SURROUND BUTTON PRESSED

TRANSFORMER PAN

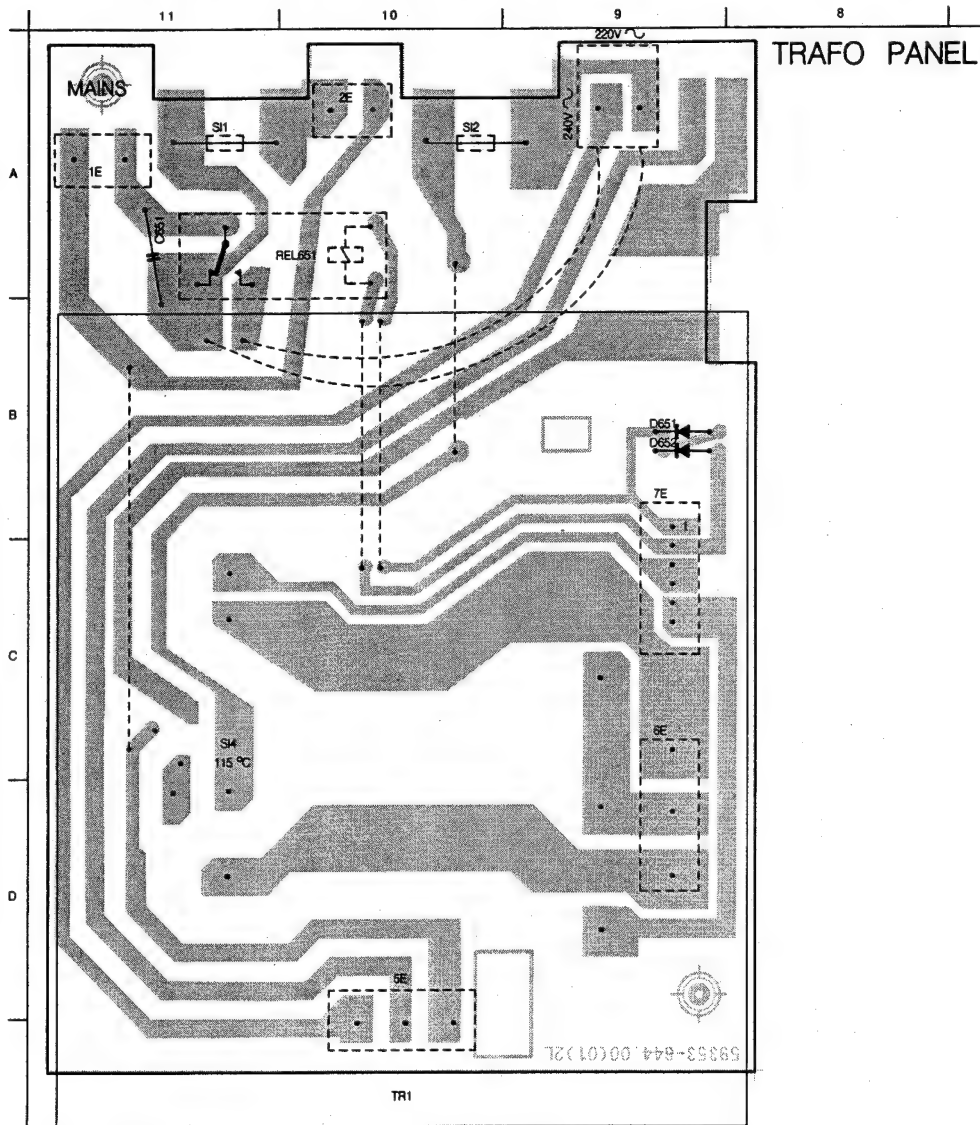
TR1
FOR 00 220V AC
FOR 05 240V AC



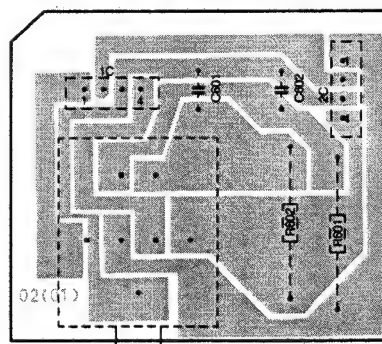
12	13	14	15	16	17
4	C501 A1	C527 D9	R501 F1	R528 H3	R556 D9
4	C502 F1	C528 F9	R502 B1	R529 C4	R557 F9
5	C503 G1	C529 E9	R503 A1	R531 H4	R558 D10
5	C504 A2	C531 F9	R504 C2	R532 G4	R559 E10
6	C505 B2	C532 G9	R505 F1	R533 E4	R561 G10
9	C506 B2	C533 G10	R506 F1	R534 B4	R562 H11
10	C507 E2	C534 H10	R507 G2	R535 C4	R563 H12
10	C508 F2	C535 G10	R508 C2	R536 C4	R601 B8
11	C509 G2	C536 H10	R509 G2	R537 C4	R602 B8
11	C510 C4	C537 G11	R511 A3	R538 E5	R701 A9
11	C511 A2	C538 H11	R512 E3	R539 F5	R702 A9
11	C512 B2	C539 H11	R513 G3	R541 F5	
11	C513 G2	C541 E11	R514 H3	R542 G5	
11	C514 A3	C542 E11	R515 G3	R543 F5	
12	C515 D3	C543 F12	R516 G3	R544 B5	
12	C516 E4	C544 G12	R517 G3	R545 B5	
12	C517 G4	C601 B8	R518 H3	R546 B5	
12	C518 B5	C602 B8	R519 C3	R547 C6	
12	C519 B5	C651 E16	R521 C3	R548 B6	
10	C521 F5	C701 A9	R522 E3	R549 D6	
10	C522 G5	C702 A9	R523 E3	R551 E6	
10	C523 G5	C703 B9	R524 A4	R552 E6	
10	C524 B6	C704 C9	R525 B4	R553 E7	
5	C525 D8	C705 C9	R526 F4	R554 D9	
16	C526 F9	C706 D9	R527 F4	R555 E9	



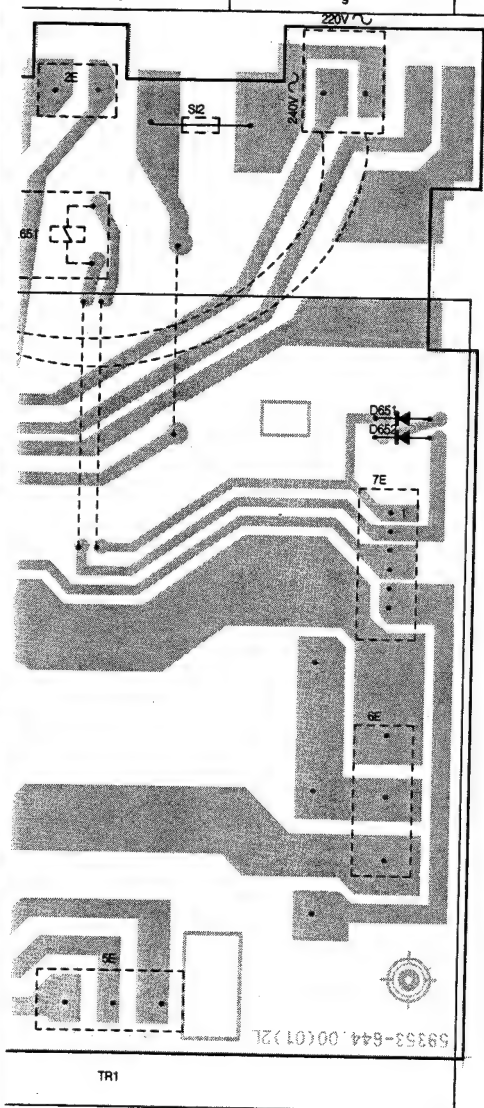
10B F1	2E A10	7B G2	C504 D5	C510 D4	C521 E3	C528 C3	C536 B5	C544 C1	C704 A1	D506 C3	D514 C2	D522 E1	1 C
1B D1	3B C1	7E B9	C505 D5	C511 F5	C522 D3	C529 D3	C537 C2	C601 F9	C705 A1	D507 C4	D515 C2	D523 D2	1 C2
1C F9	4B D1	8B G4	C505 F4	C512 D5	C523 G4	C531 E3	C538 C5	C602 F8	C706 A3	D508 C3	D516 D1	D524 E2	1 C3
1D A1	5B B2	9B G5	C506 F5	C513 F4	C524 F3	C532 C4	C539 B1	C651 A11	D502 G3	D509 C3	D517 C1	D525 D2	L5C
1E A11	5E D10	C501 G5	C507 F4	C517 G3	C525 B4	C533 C5	C541 D2	C701 A1	D503 G4	D511 C1	D518 C1	D526 E2	L5C
2B E1	6B B4	C502 G4	C508 F4	C518 E3	C526 B3	C534 B5	C542 E2	C702 A1	D504 F3	D512 D2	D519 C1	D528 B9	R5C
2C F8	6E C9	C503 G4	C509 G4	C519 D3	C527 C3	C535 C5	C543 C1	C703 A3	D505 G3	D513 C2	D521 C1	D529 B9	R5C



HEADPHONE SOCKET PANEL

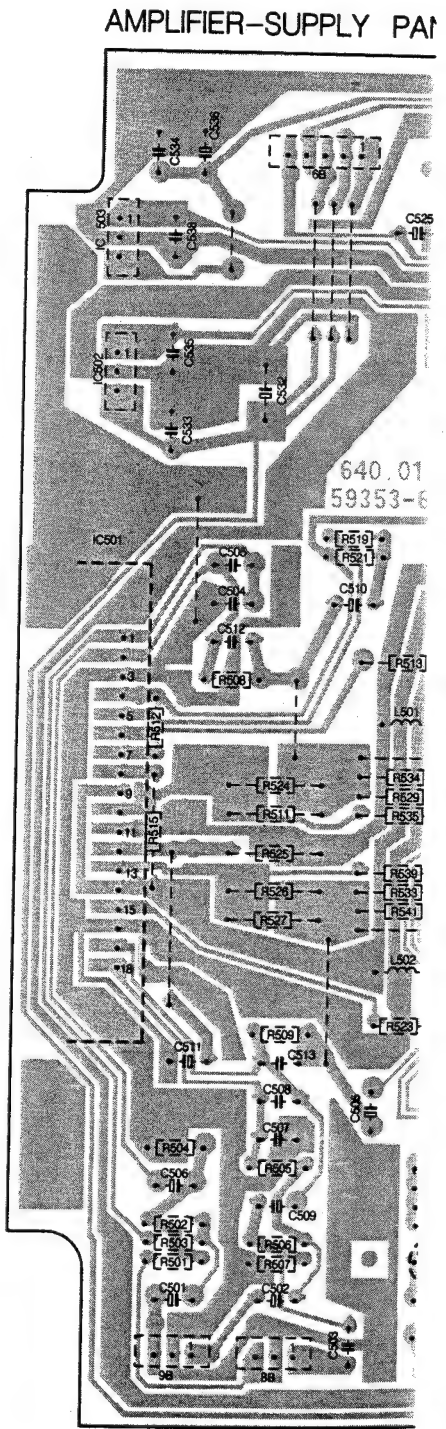


32	C504 D5	C510 D4	C521 E3	C528 C3	C536 B5	C544 C1	C704 A1	D508 C3	D514 C2	D522 E1	IC 50 C5	R503 G5	R511 E4	R519 D4	R527 E4	R536 G4	R544
39	C505 D5	C511 F5	C522 D3	C529 D3	C537 C2	C801 F9	C705 A1	D507 C4	D515 C2	D523 D2	IC501 D5	R504 F5	R512 E5	R521 D4	R529 E4	R537 G4	R545
34	C506 F4	C512 D5	C523 G4	C531 E3	C538 C5	C802 F8	C706 A3	D509 C3	D516 D1	D524 E2	IC502 C5	R505 F4	R513 D4	R522 D3	R531 G3	R538 F4	R546
35	C508 F5	C513 F4	C524 F3	C532 C4	C539 B1	C851 A11	D502 G3	D509 C3	D517 C1	D525 D2	L501 E4	R506 G4	R514 F3	R523 F4	R532 G4	R539 E4	R547
36	C507 F4	C517 G3	C525 B4	C533 C5	C541 D2	C701 A1	D503 G4	D511 C1	D518 C1	D526 E2	L502 F4	R507 G4	R515 E5	R524 E4	R533 E4	R541 E4	R548
34	C508 F4	C516 E3	C526 B3	C534 B5	C542 E2	C702 A1	D504 F3	D512 D2	D519 C1	D521 C1	R501 G5	R508 D5	R516 F3	R525 E4	R534 E4	R542 G4	R549
34	C509 G4	C519 D3	C527 C3	C535 C5	C543 C1	C703 A3	D505 G3	D513 C2	D521 C1	D522 B9	R502 G5	R509 F4	R517 F3	R526 E4	R535 E4	R543 E3	R551

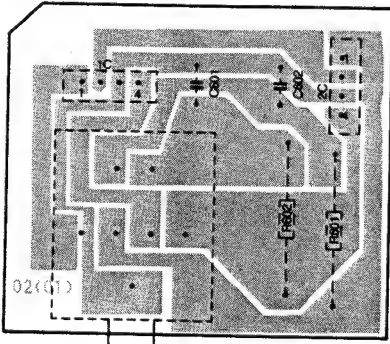


TRAFO PANEL

LOUDSPEAKER CLAMP PA

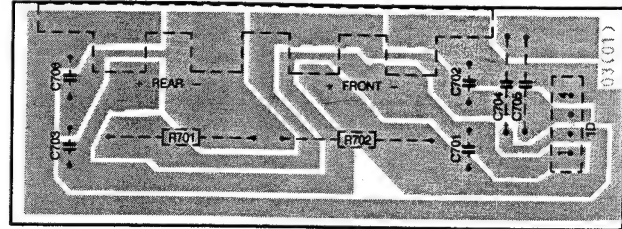


HEADPHONE SOCKET PANEL

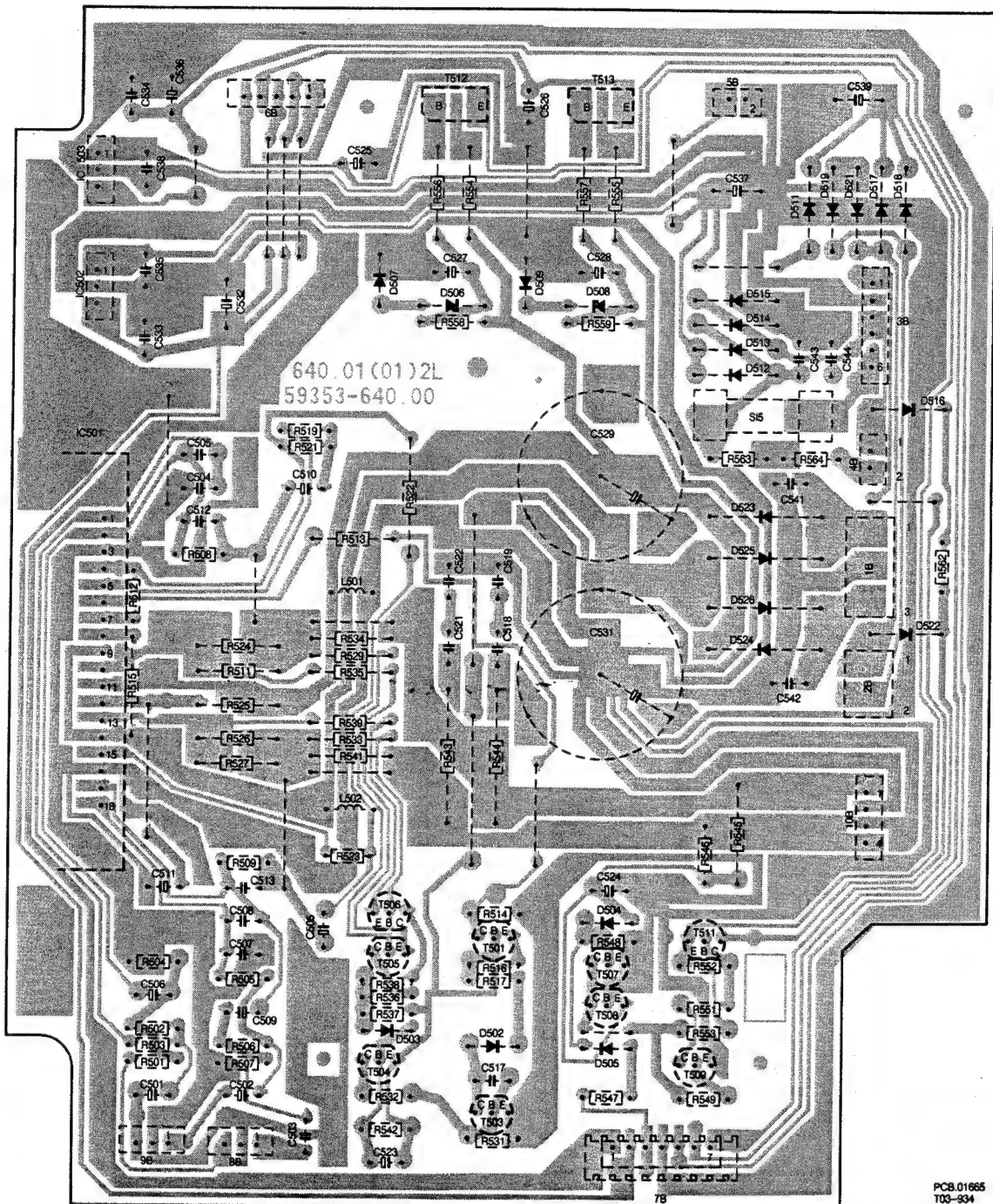


1522 E1	IC 50 C5	R503 G5	R511 E4	R519 D4	R527 E4	R536 G4	R544 E3	R552 F2	R559 C3	R702 A2	T503 G3	T511 F2
1523 D2	IC501 D5	R504 F5	R512 E5	R521 D4	R529 E4	R537 G4	R545 F2	R553 G2	R562 D1	REL65 A11	T504 G4	T512 B3
1524 E2	IC502 C5	R505 F4	R513 D4	R522 D3	R531 G3	R538 F4	R546 F2	R554 C3	R563 D2	SI 1 A11	T505 F4	T513 B3
1525 D2	L501 E4	R506 G4	R514 F3	R523 F4	R532 G4	R539 E4	R547 G3	R555 C2	R564 D2	SI 2 A10	T506 F4	TR1 E10
1526 E2	L502 F4	R507 G4	R515 E5	R524 E4	R533 G4	R541 E4	R548 F3	R556 C3	R601 G8	SI 4 C11	T507 F3	
1551 B9	R501 G5	R508 D5	R518 F3	R525 E4	R534 E4	R542 G4	R549 G2	R557 C3	R602 G8	SI 5 D2	T508 G3	
1552 B9	R502 G5	R509 F4	R517 F3	R526 E4	R535 E4	R543 E3	R551 G2	R558 C3	R701 A2	T501 F3	T509 G2	

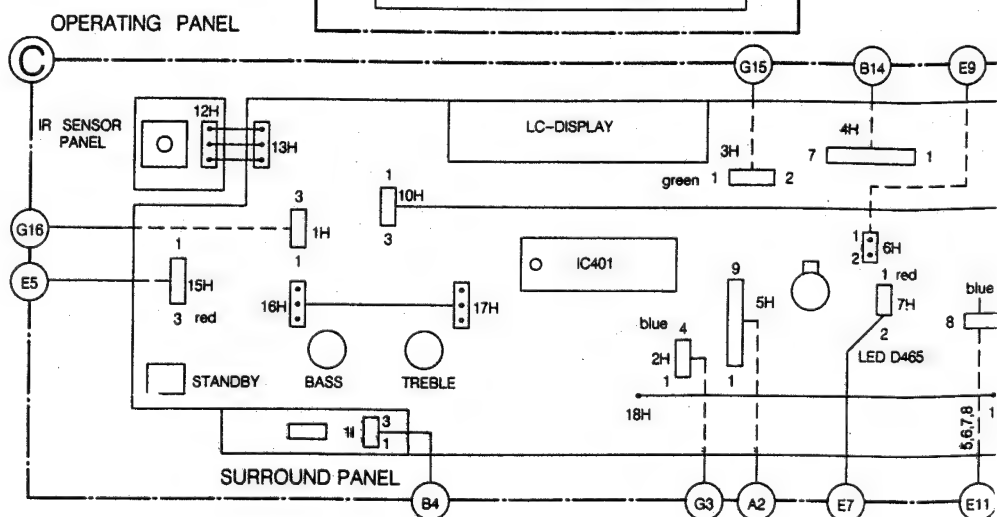
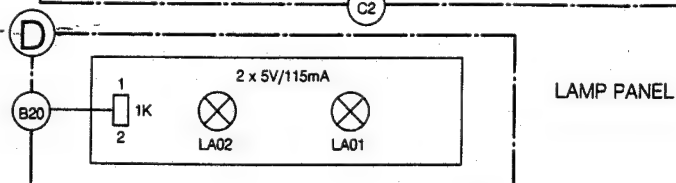
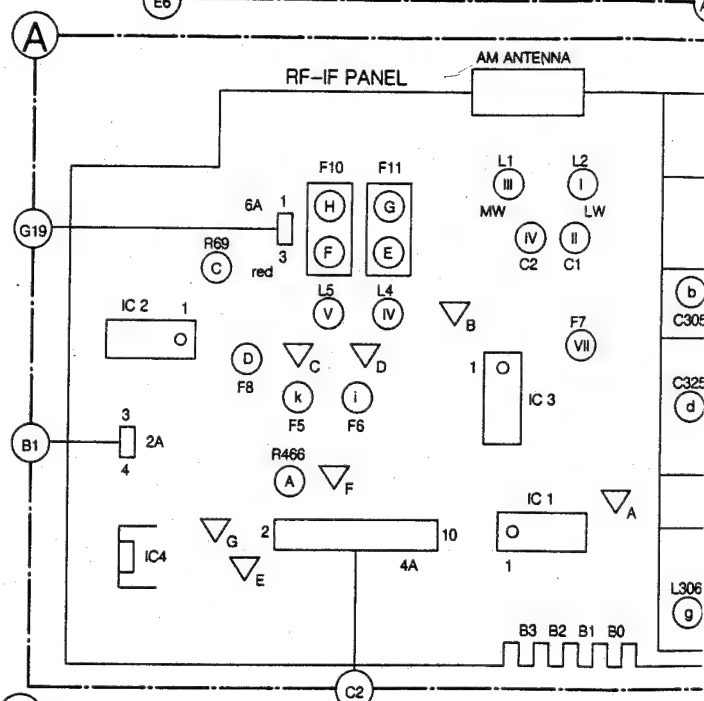
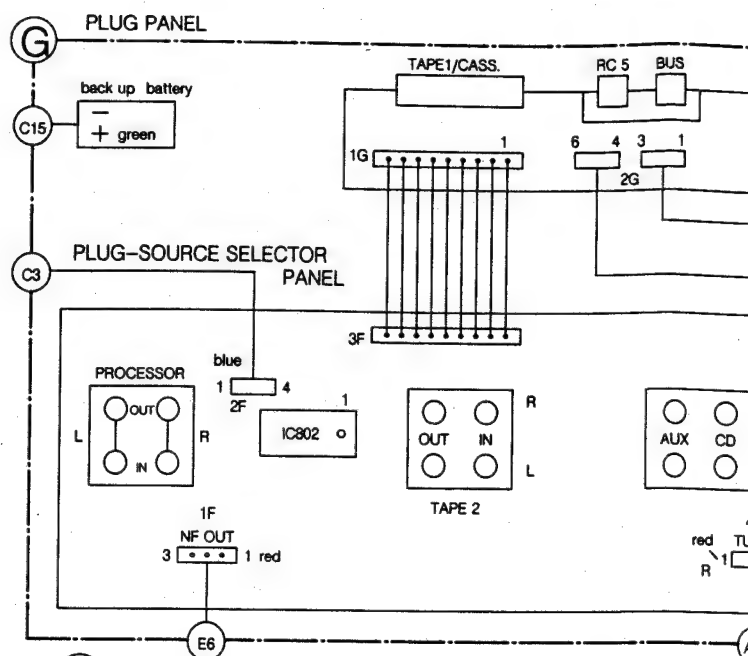
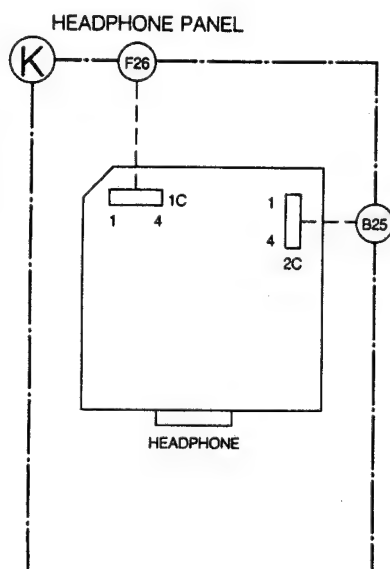
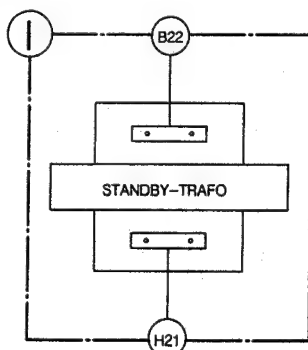
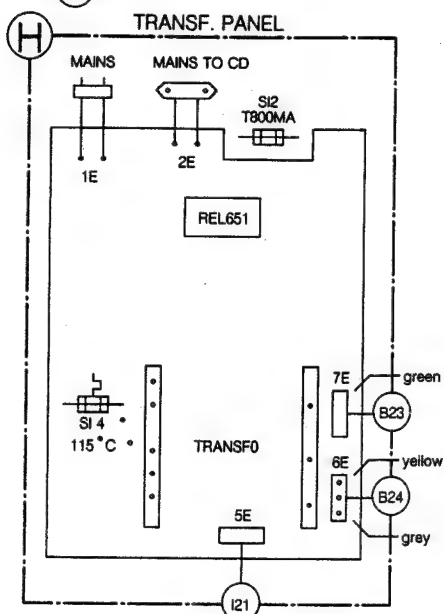
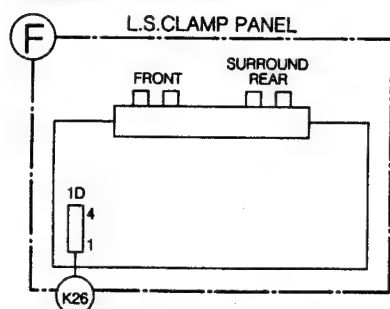
LOUDSPEAKER CLAMP PANEL

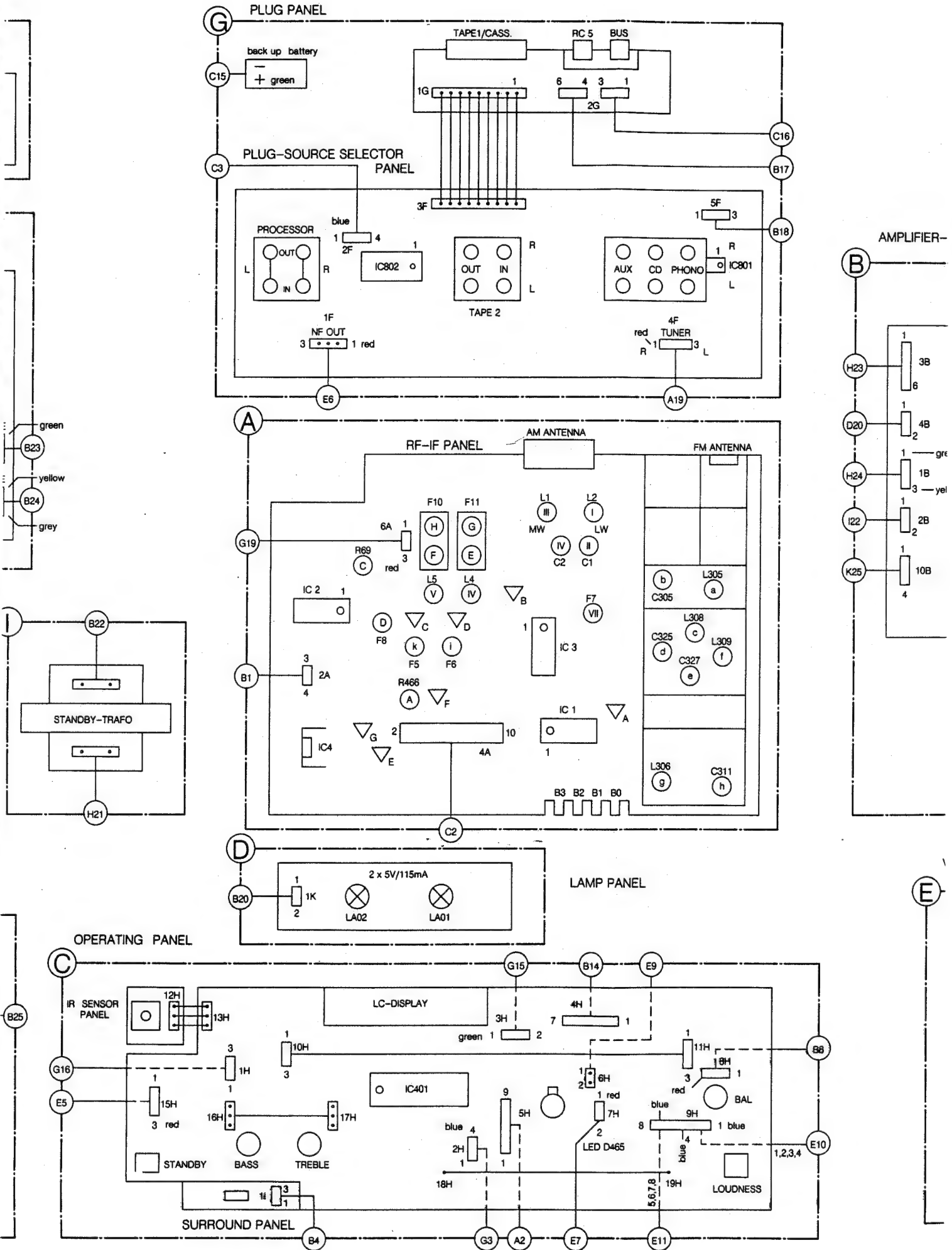


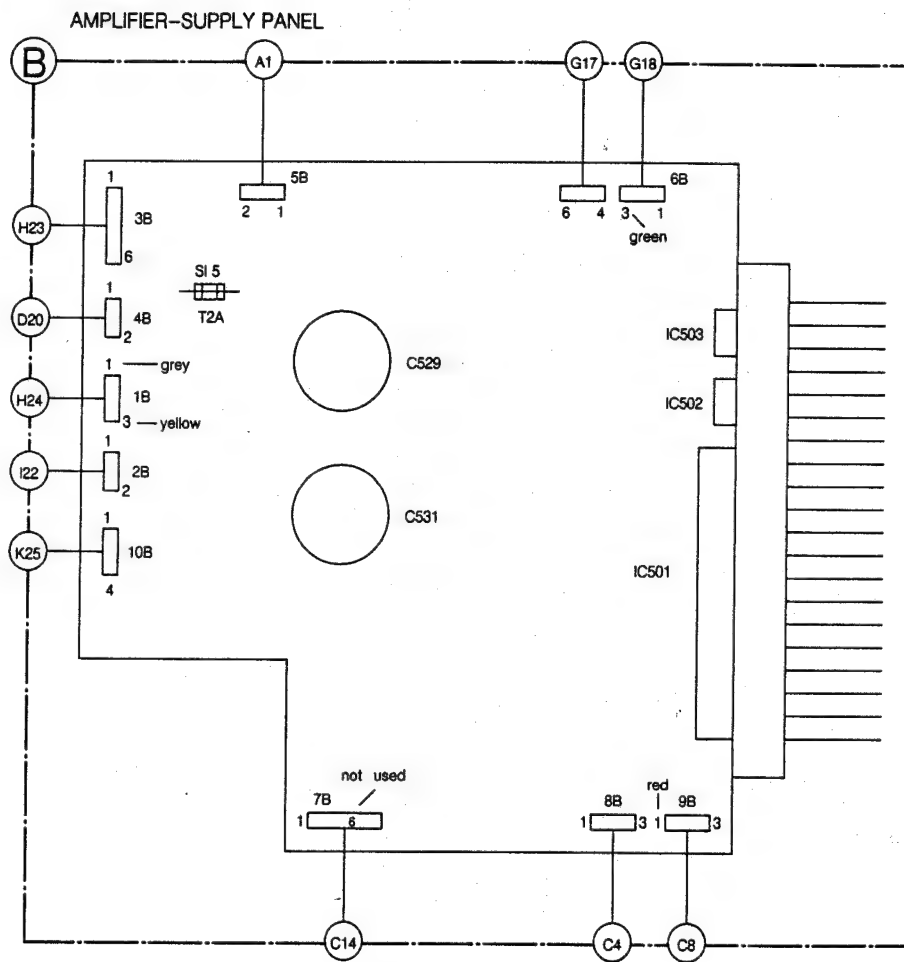
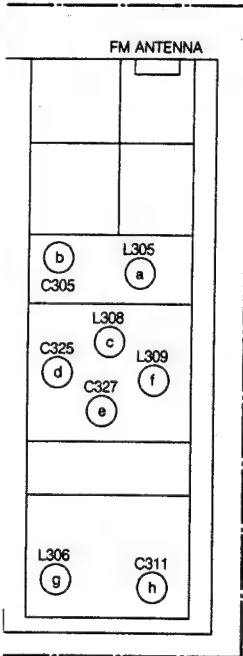
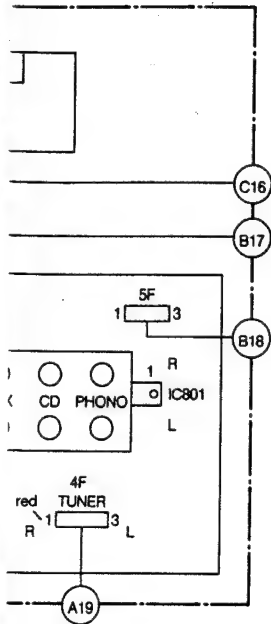
AMPLIFIER-SUPPLY PANEL



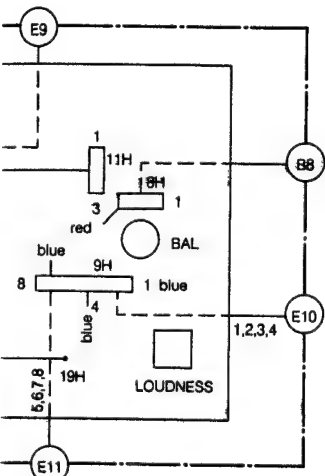
PCB.01665
T03-934



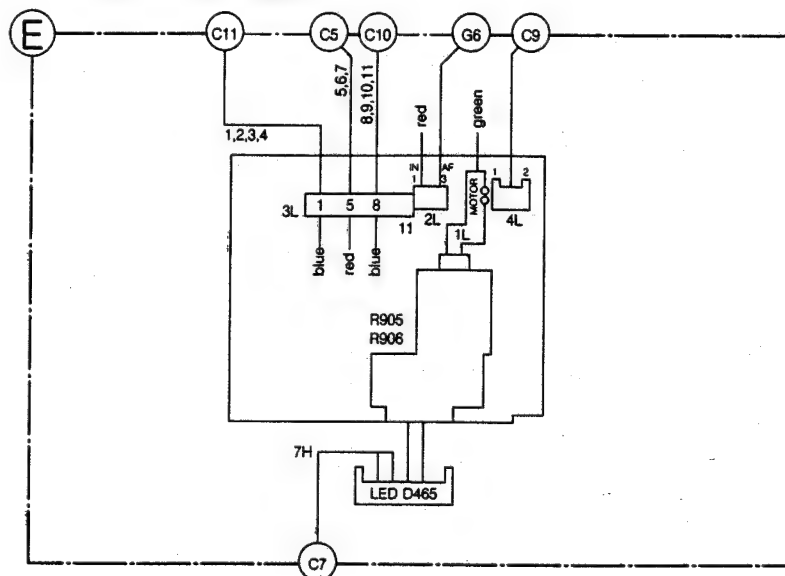




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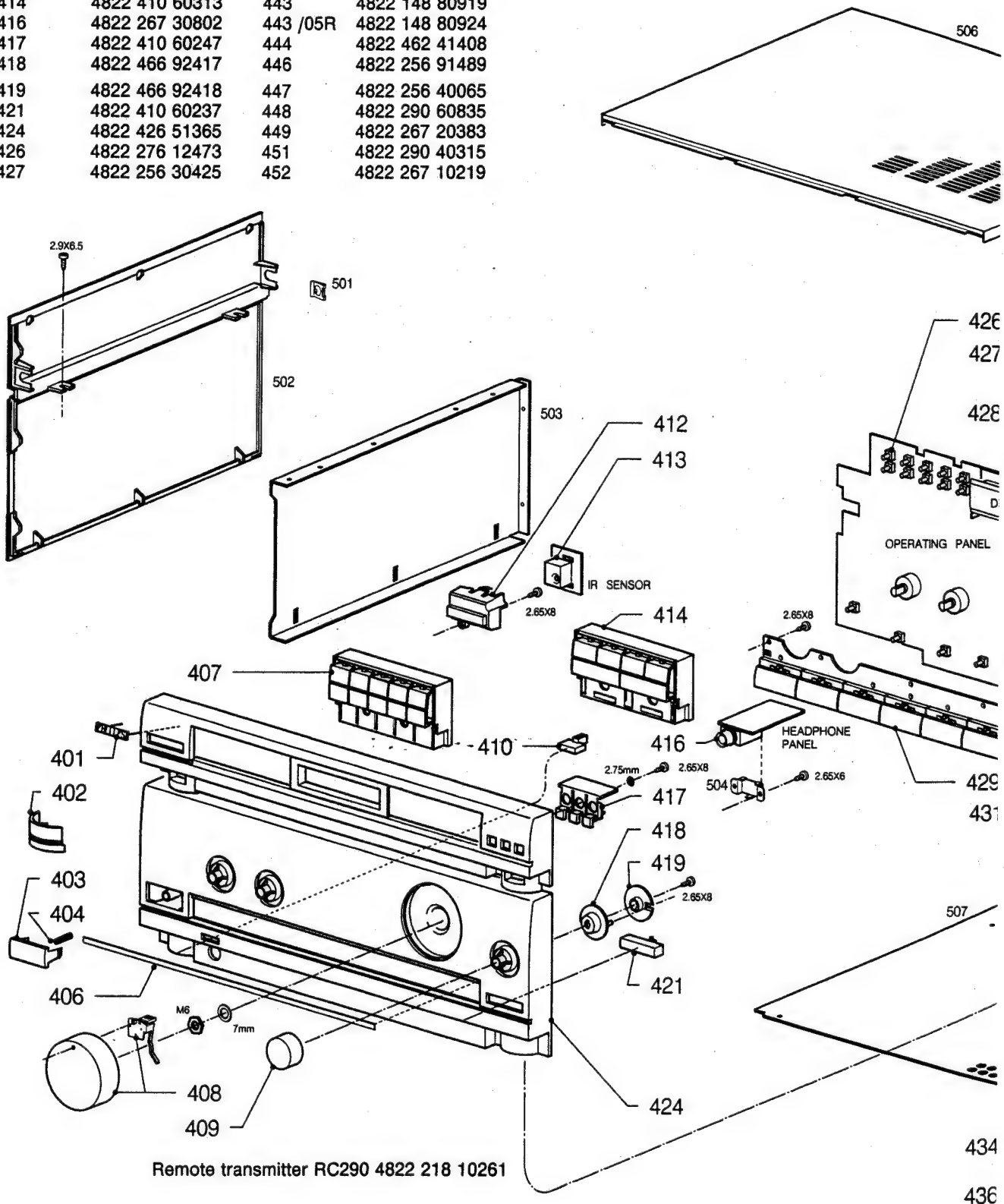


VOLUME CONTROL PANEL

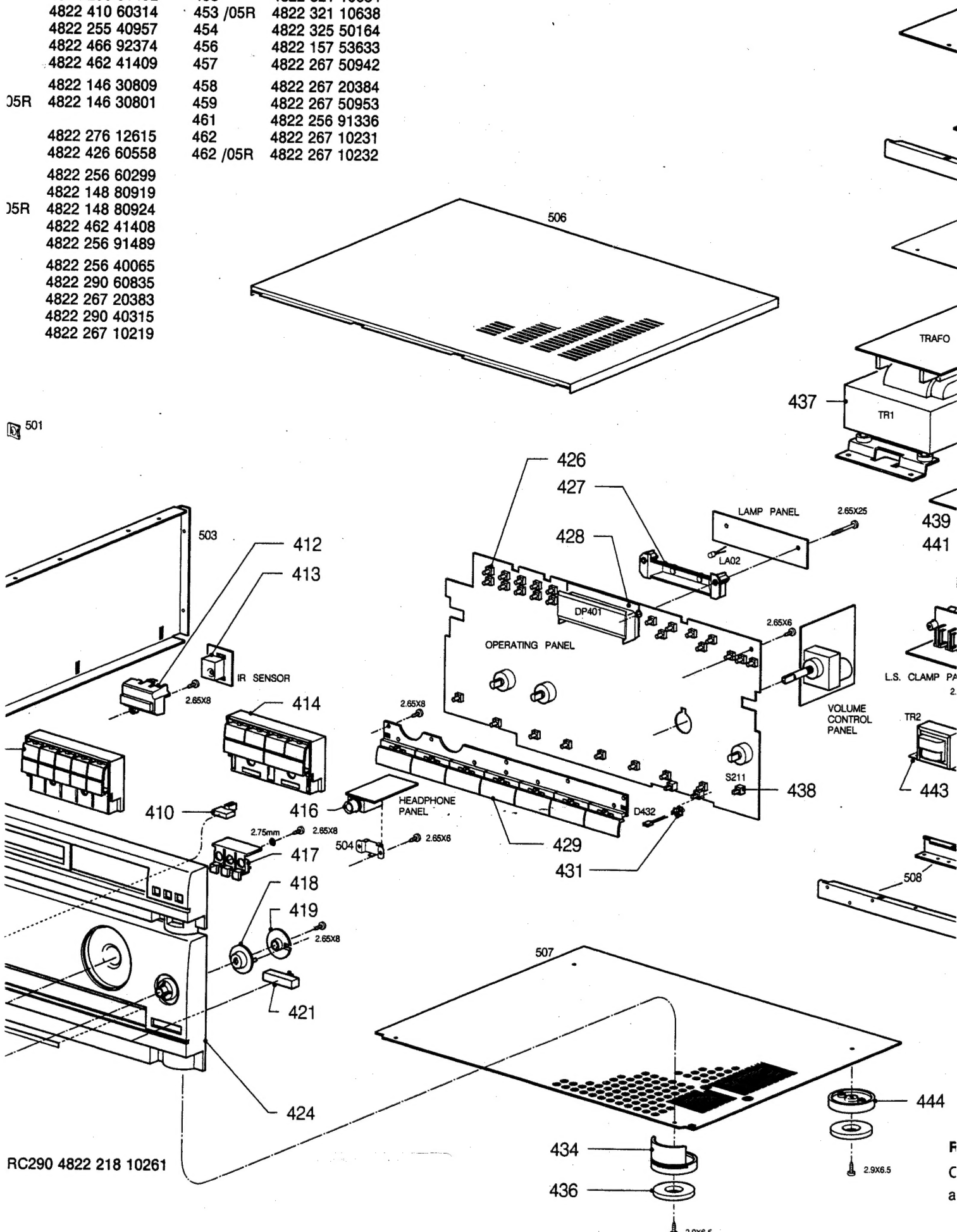


List of mechanical parts

401	4822 459 10806	428	4822 256 91492	453	4822 321 10634
402	4822 460 10966	429	4822 410 60314	453 /05R	4822 321 10638
403	4822 276 12621	431	4822 255 40957	454	4822 325 50164
404	4822 492 52115	434	4822 466 92374	456	4822 157 53633
406	4822 466 92425	436	4822 462 41409	457	4822 267 50942
407	4822 410 60312	437	4822 146 30809	458	4822 267 20384
408	4822 413 41535	437 /05R	4822 146 30801	459	4822 267 50953
409	4822 413 41529			461	4822 256 91336
410	4822 410 60249	438	4822 276 12615	462	4822 267 10231
412	4822 218 10295	439	4822 426 60558	462 /05R	4822 267 10232
413	4822 218 10292	441	4822 256 60299		
414	4822 410 60313	443	4822 148 80919		
416	4822 267 30802	443 /05R	4822 148 80924		
417	4822 410 60247	444	4822 462 41408		
418	4822 466 92417	446	4822 256 91489		
419	4822 466 92418	447	4822 256 40065		
421	4822 410 60237	448	4822 290 60835		
424	4822 426 51365	449	4822 267 20383		
426	4822 276 12473	451	4822 290 40315		
427	4822 256 30425	452	4822 267 10219		

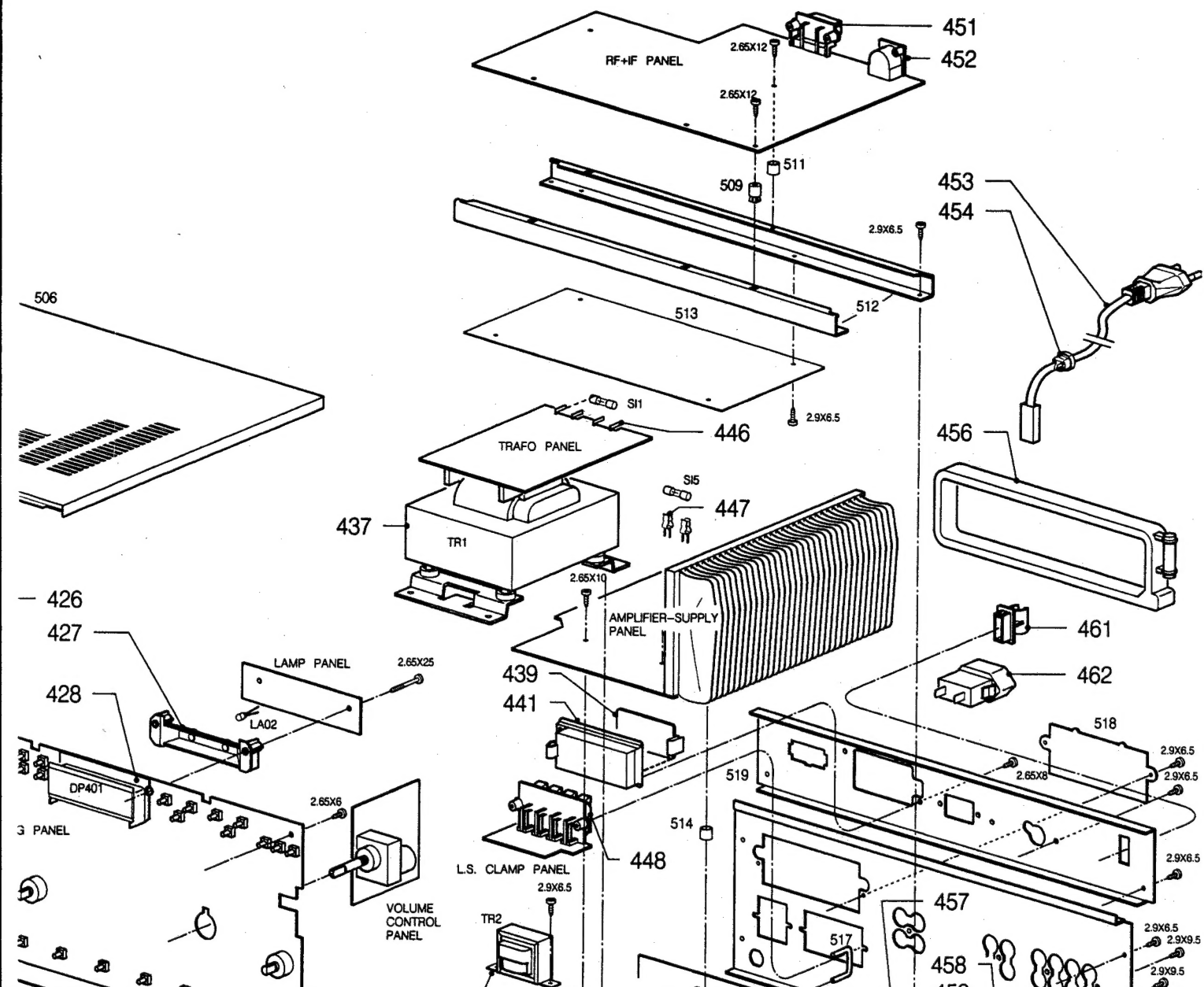


4822 256 91492	453	4822 321 10634
4822 410 60314	453 /05R	4822 321 10638
4822 255 40957	454	4822 325 50164
4822 466 92374	456	4822 157 53633
4822 462 41409	457	4822 267 50942
4822 146 30809	458	4822 267 20384
05R 4822 146 30801	459	4822 267 50953
	461	4822 256 91336
4822 276 12615	462	4822 267 10231
4822 426 60558	462 /05R	4822 267 10232
4822 256 60299		
4822 148 80919		
05R 4822 148 80924		
4822 462 41408		
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4822 256 40065		
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4822 290 40315		
4822 267 10219		



RC290 4822 218 10261

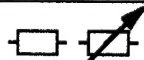
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C
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List of electrical parts



C1	4822 125 50332	Cap. trimmer 7.5-50 pF LW-RF
C2	4822 125 50329	Cap. trimmer 4.5-20 pF MW-RF
C12	4822 122 33562	Cap. ceramic 36 pF 2% N150
C13	4822 122 33562	Cap. ceramic 36 pF 2% N150
C22	4822 122 33568	Cap. ceramic 68 pF 2% N750
C23	4822 122 33567	Cap. ceramic 4.7 pF 0.25 pF 2% N750
C24	4822 122 33565	Cap. ceramic 150 pF 2% N470
C26	4822 122 33572	Cap. ceramic 390 pF N1500
C45	4822 122 33571	Cap. ceramic 100 pF 5% N750
C46	4822 122 33571	Cap. ceramic 100 pF 5% N750
C62	4822 122 33569	Cap. ceramic 180 pF 2% N750
C66	4822 122 33569	Cap. ceramic 180 pF 2% N750
C225	4822 122 33571	Cap. ceramic 100 pF 5% N750
C226	4822 122 33571	Cap. ceramic 100 pF 5% N750
C305	4822 125 50329	Cap. trimmer 4.5-20 pF FM-RF
C311	4822 125 50386	Cap. trimmer 3-10 pF FM-osc
C312	4822 122 33563	Cap. ceramic 3.3 pF 0.5 pF N150
C316	4822 122 33559	Cap. ceramic 10 pF 2% N150
C322	4822 122 33559	Cap. ceramic 10 pF 2% N150
C325	4822 125 50329	Cap. trimmer 4.5-20 pF FM-RF
C327	4822 125 50329	Cap. trimmer 4.5-20 pF FM-RF
C332	4822 122 33564	Cap. ceramic 150 pF 2% N150
C334	4822 122 33557	Cap. ceramic 4.7 pF 0.25 pF N150
C336	4822 122 33561	Cap. ceramic 22 pF 5% N150
C405	4822 122 33571	Cap. ceramic 100 pF 5% N750
C406	4822 122 33571	Cap. ceramic 100 pF 5% N750
C801	4822 126 10302	Cap. ceramic 47 pF 5% N150
C802	4822 126 10302	Cap. ceramic 47 pF 5% N150
C803	4822 126 10302	Cap. ceramic 47 pF 5% N150
C804	4822 122 33571	Cap. ceramic 100 pF 5% N750
C805	4822 126 10302	Cap. ceramic 47 pF 5% N150
C806	4822 126 10302	Cap. ceramic 47 pF 5% N150
C807	4822 126 10302	Cap. ceramic 47 pF 5% N150
C808	4822 126 10302	Cap. ceramic 47 pF 5% N150
C809	4822 122 33571	Cap. ceramic 100 pF 5% N750
C811	4822 126 10302	Cap. ceramic 47 pF 5% N150
C812	4822 126 10302	Cap. ceramic 47 pF 5% N150
C814	4822 126 10302	Cap. ceramic 47 pF 5% N150
C822	4822 126 10302	Cap. ceramic 47 pF 5% N150
C825	4822 126 10302	Cap. ceramic 47 pF 5% N150



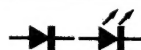
R66	4822 100 20694	Potm. trimmer 100K
R69	4822 100 20694	Potm. trimmer 100K
R73	4822 111 91658	Res. carbon 270K 2%
R78	4822 111 91658	Res. carbon 270K 2%
R211	4822 101 30636	Potm. 100K balance
R252	4822 102 20099	Potm. 2x50K bass
R253	4822 102 20101	Potm. 2x10K treble
R323	4822 116 53666	Saf. res. 47 Ω 5%
R327	4822 116 53666	Saf. res. 47 Ω 5%
R332	4822 116 81908	Saf. res. 12 Ω 5%
R424	4822 116 53666	Saf. res. 47 Ω 5%
R511	4822 116 81993	Saf. res. 100 Ω 5%
R543	4822 116 81905	Saf. res. 10 Ω 2W 5%
R544	4822 116 81905	Saf. res. 10 Ω 2W 5%
R554	4822 116 53669	Saf. res. 33 Ω 5%
R555	4822 116 53669	Saf. res. 33 Ω 5%
R601	4822 116 81907	Saf. res. 560 Ω 2W 5%
R602	4822 116 81907	Saf. res. 560 Ω 2W 5%
R701	4822 116 81906	Saf. res. 39 Ω 2W 5%
R702	4822 116 81906	Saf. res. 39 Ω 2W 5%
R905, R906	4822 102 20102	Potm. 2x50K volume



4822 130 41246	BC327-25
5322 130 44647	BC368
4822 130 44461	BC546B
4822 130 40937	BC548B
4822 130 44196	BC548C
4822 130 41096	BC550C
4822 130 41691	BC556B
4822 130 44197	BC558B
4822 130 61755	BC560C
4822 130 61753	BD825-10
4822 130 61754	BD826-10
4822 130 40902	BF240
4822 130 41817	BF982-I
4822 130 42121	2SK30
4822 130 61298	2SK544E



4822 209 73435	LC7217
4822 209 72748	LC7821
4822 209 73452	LM833
4822 209 61336	M 34200M4-160SP
4822 209 70361	MC78M06CT
4822 209 61268	STK4141 V
5322 130 42221	7812
4822 209 71785	LA1266
4822 209 73434	LA3401



4822 130 33773	BAT42/BAT43
4822 130 31322	GL-9 PR2
4822 130 81003	KV1310
4822 130 81595	Zen. diode 2.7V 0.5W
4822 130 33783	Zen. diode 6.8V 0.5W
4822 130 81596	Zen. diode 6.8V 1.3W
4822 130 33785	Zen. diode 16V
4822 130 31438	1N4001
5322 130 30684	1N4002
4822 130 30621	1N4148
5322 130 34052	1N4151
4822 130 50462	1N5401G
4822 130 81002	SVC321



F1+F4	4822 242 72291	Cer. filter 10.7 MHz FM-IF
F5	4822 156 11093	Coil FM-IF
F6	4822 156 11092	Coil FM-IF
F7	4822 242 72289	Cer filter AM-IF 450 KHz
F8	4822 214 51727	LP filter
F9	4822 156 11104	Filter pilot 19 KHz
F10	4822 156 11104	Filter pilot 19 KHz
L1	4822 156 11094	Coil MW-RF
L2	4822 156 11095	Coil LW-RF
L3	4822 156 11091	Coil LW-osc.
L4	4822 156 11089	Coil MW-osc.
L5	4822 157 53632	Coil, choke 39 MH
L305	4822 156 11099	Coil FM-RF
L306	4822 156 11096	Coil FM-osc.
L307	4822 157 60206	Coil, choke
L308	4822 156 11098	Coil FM-RF
L309	4822 156 11097	Coil FM-RF
L311	4822 157 53631	Coil 1.5 UH
L501	4822 157 60207	Coil
L502	4822 157 60207	Coil



L901	4822 157 60208	Coil 47UH
L902	4822 157 60208	Coil 47UH
TR1	4822 146 30809	Transf. Mains 220 V
TR1 /05R	4822 146 30801	Transf. Mains 240 V
TR2	4822 148 80919	Stand-by trafo
TR2 /05R	4822 148 80924	Stand-by trafo

Miscellaneous

DP401	4822 130 90692	LCD display
KR401	4822 242 72611	Crystal CSB1000D
LA401	4822 134 40957	Lamp 5V 115 mA
LA402	4822 134 40957	Lamp 5V 115 mA
P301	4822 526 10406	Bar, ferrite
P302	4822 526 10406	Bar, ferrite
REL651	4822 280 50076	Relais G2R-117P
Q1	4822 242 72294	Crystal 7.2 MHz
Q2	4822 242 72295	Crystal 456 KHz
SI1	4822 253 30019	Fuse 800 mA/T
SI2	4822 253 30022	Fuse 1.25A/T
SI4	4822 252 20237	Thermo fuse 115°C
SI5	4822 253 30025	Fuse 2A/T